

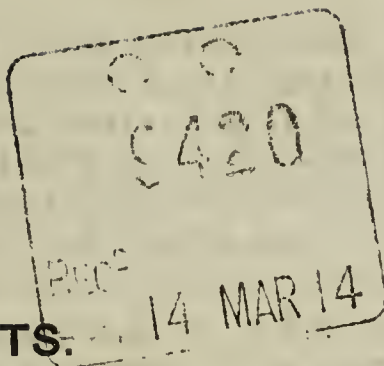
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STRAITS SETTLEMENTS.

The Straits Settlements Medical Report for the Year 1912.

1. *Population and Health.*—The following table shows the estimated population and the birth and death-rates for the years 1911 and 1912:—

SETTLEMENT.	Estimated mean Population.		Births No.		Deaths No.		Birth Ratio per mille.		Death Ratio per mille.	
	1911.	1912.	1911.	1912.	1911.	1912.	1911.	1912.	1911.	1912.
Singapore ...	303,321	312,028	6,580	7,041	15,499	13,096	21·69	22·57	51·10	41·97
Labuan ...	6,546	6,634	189	211	183	125	28·87	31·80	27·96	18·84
Penang ...	141,559	143,236	3,371	3,766	5,883	4,954	23·81	26·29	41·46	34·59
Province Wellesley	128,978	130,803	3,789	4,456	3,979	3,679	29·38	34·06	30·76	28·13
Dindings ...	7,466	8,137	198	235	369	294	26·52	28·89	48·63	36·13
Malacca ...	124,081	127,797	3,942	4,885	7,162	6,274	31·77	38·22	57·72	49·09
Total ...	711,951	728,635	18,069	20,594	33,075	28,422	25·38	28·26	46·46	39·01

The figures for the European population only are:—

—	Estimated mean Population.		Births No.		Deaths No.		Birth Ratio per mille.		Death Ratio per mille.	
	1911.	1912.	1911.	1912.	1911.	1912.	1911.	1912.	1911.	1912.
Straits Settlements.	7,310	7,500	159	181	93	93	21·75	24·13	12·72	12·40

2. The population for 1911 shown by the Census figures was 711,951 and is estimated at 728,635 for 1912.

3. These estimated figures are based on the increase of the Census figures for 1911 over those for 1901 calculated by geometrical progression. The natural means of estimating the population on the number of births, deaths, immigrants and emigrants is impracticable in the Straits Settlements as records under the latter two heads are unreliable under the present easy communication with the neighbouring States and islands by rail, road and water. Until the Malay Peninsula can be taken as a whole on very reliable population figures are possible except in Census years. The varying numbers of the estate labourers population not only year by year but month by month is one of the great difficulties and will be until practically all estates are in the bearing stage.

As pointed out in the previous year's report the estimated population for 1911 was 49,000 below the actual figures of the Census.

4. *Births.*—The births registered during the year numbered 20,594 and were equal to a rate of 28·26 per 1,000 persons living. This rate is higher by 2·88 than that recorded in the preceding year and by 1·76 than the average for the ten years 1902–1911.

5. *Deaths*.—The deaths from all causes registered in 1912 numbered 28,422, and corresponded to a rate of 39·01 per 1,000 of the population, compared with 46·46 in 1911 and 41·88 in 1910. The average for the ten years 1902–1911 was 40·74 per mille of population. As usual the largest number of deaths was due to malaria (4,303) and “fever not specified” (4,194).

The attached chart shows the weekly incidence of deaths from malaria, beri-beri, phthisis and dysentery for the Settlement of Singapore and may be of interest.

The influx of sick labourers from neighbouring States and islands is considerable and does much to augment our death-rate. Some figures upon this point will be available next year. For two months passengers arriving in Singapore by small steamers from a neighbouring State were examined individually by the Port Health Officers and of 4,048 arriving 1,123 suffered from malarial fever or enlarged spleen and 898 others were markedly anæmic.

6. The infantile mortality rate, calculated on the birth-rate, excluding those dying who were born outside the Colony, was 267·21, as compared with 270·47 for 1911 and 268·93 for 1910. It is a common practice in Singapore to dump infants in all stages of neglect and disease at the Convent gates in the night; of such, 300 died in the course of the year.

This large infant death-rate does not necessarily imply a high tendency to death among the rest of the population. The chief causes of infantile mortality prevailing in the Straits are inexperience, ignorance and neglect of mothers; improper food; and the overcrowding in the larger towns with its consequent domestic mal-hygiene. As I stated in my report for the previous year we are doing our utmost by the appointment of female inspectors to the Municipal Health Departments and by the training of midwives to educate the mothers, not an easy matter considering the many races we have to deal with and their many prejudices.

7. The following table gives the number of cases of zymotic diseases occurring in the Colony during 1911 and 1912, excluding imported cases:—

SETTLEMENT.	PLAGUE.				CHOLERA.				SMALL-POX.			
	1911.		1912.		1911.		1912.		1911.		1912.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Singapore ...	35	32	37	33	296	270	128	115	241	98	70	39
Penang ...	...	...	...	...	64	55	...	...	109	36	6	1
Dindings ...	...	...	...	...	...	...	...	...	14	1	...	...
Province Wellesley...	...	...	...	...	19	6	3	2	357	78	2	2
Malacca ...	...	...	...	...	1	1	2	2	558	173	46	15
Labuan ...	...	...	...	...	...	...	...	...	2	...	...	...
Total ...	35	32	37	33	380	332	133	119	1,281	386	124	57

8. *Plague*.—Of the 37 cases of plague 3 occurred among Malays, 15 among Indians and 19 among Chinese. Thirty-three of these ended fatally. All were in Singapore.

9. *Cholera*.—Of the 133 cases 128 occurred in Singapore. Most of these were brought into the Quarantine Hospital moribund or dead, hence the heavy mortality rate. Of those admitted alive, 26 were from the dysentery and phthisis wards of Tan Tock Seng's Hospital in whom but little hope of recovery could be expected. All were treated with Roger's hypertonic saline infusion and permanganate of potash.

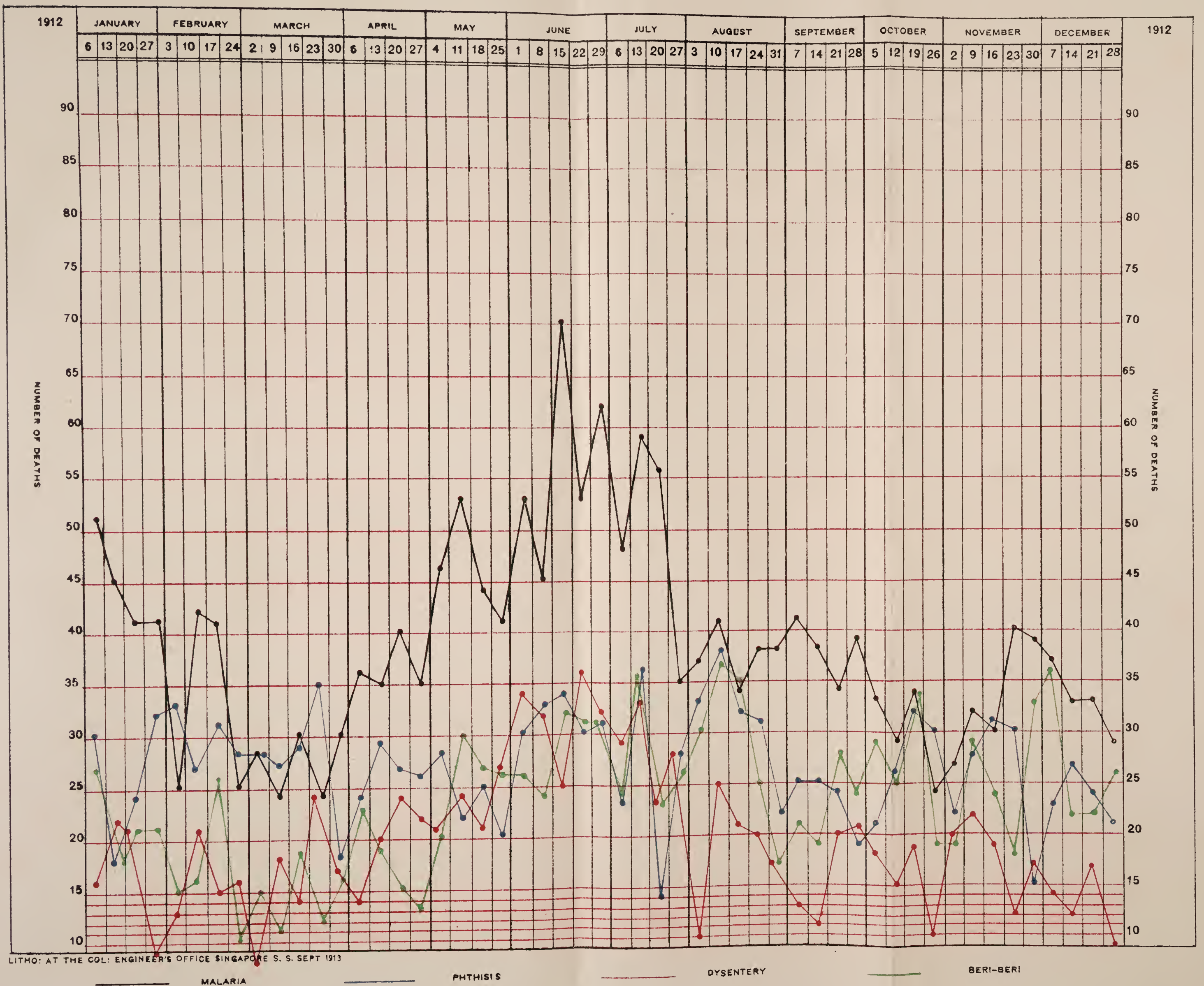
The first cases were brought to notice in May and the outbreak continued until September. The largest number reported in any one week was 25.

10. *Small-pox*.—There were 124 cases with 57 deaths, against 1,281 cases with 386 deaths in 1911. Seventy cases of these occurred in Singapore and 46 in Malacca.

11. *Diphtheria*.—There was only one case treated in the hospitals of the Colony, compared with five in the preceding year.

12. *Enteric Fever*.—There were 133 cases treated in the hospitals of the Colony with 63 deaths.

CHART SHEWING THE TOTAL WEEKLY DEATHS FROM MALARIA, PHTHISIS, DYSENTERY, AND BERI-BERI IN SINGAPORE ISLAND FOR THE YEAR 1912





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The majority of the cases seen in Singapore occur amongst jinrikisha pullers. Of 53 admissions to the General Hospital 34 were of this occupation and 9 out of 11 bodies showing typhoid ulcers at the public morgue were also pullers. The question of "carriers" amongst them needs investigation but with this class of people a thorough examination is practically impossible. Dr. MCVAIL in his report on Tan Tock Seng's Hospital explains the reason for the high mortality rate.

13. *Beri-beri*.—The deaths from beri-beri were 1,926, as compared with 2,056 in 1911. The following table gives the deaths from beri-beri for the last five years for all Settlements:—

Deaths from Beri-beri.

Settlement.	1908.	1909.	1910.	1911.	1912.
Singapore	1,117	873	1,071	1,220	1,224
Penang	534	399	367	368	349
Province Wellesley	20	11	6	6	6
Dindings	2	4	7	9	...
Malacca	227	219	267	443	344
Labuan ... ..	...	...	19	10	3
Total ...	1,900	1,506	1,737	2,056	1,926

The following are the number of cases of beri-beri treated in the various hospitals of the Colony for the past five years:—

Beri-beri cases treated 1908–1912.

Year.	Total Cases.	Deaths.	Percentage of Deaths.
—	—	—	—
1908	2,777	284	10·23
1909	2,118	224	10·57
1910	2,044	290	14·18
1911	2,152	242	11·24
1912	2,032	293	14·41

Of 370 chronic cases treated at the Beri-beri Hospital at Pasir Panjang but 3 died from the disease.

14. *Venereal Diseases*.—The admissions to all hospitals in 1912 were 3,318 with 39 deaths, compared with 2,591 with 40 deaths in 1911. Salvarsan, in selected cases of syphilis, has proved most successful and will be more largely used in future.

15. *Phthisis*.—Deaths registered from this cause numbered 2,582, against 2,907 in 1911 and 2,571 in 1910. It must be some years before the many sanitation works completed and under construction by the various Municipalities can be expected to show any marked beneficial results in the death-rate from this disease.

16. *Dysentery*.—The deaths from this cause totalled 1,549, against 2,035 in 1911 and 1,392 in 1910. The total treated in hospitals, 1,845 with 654 deaths, compared with 2,268 with 996 deaths in 1911. Dr. SCOTT, the Acting Government Pathologist, attaches to his report some most interesting and instructive remarks upon this disease.

17. *Malaria*.—The deaths from this cause numbered 4,303. There were also 4,194 deaths returned as being due to fever unspecified, a large number of these were undoubtedly malarial fever. The admissions from malarial fever to the Hospitals of the Colony, where all cases are diagnosed microscopically, were 9,172

with 660 deaths, compared with 11,815 with 1,014 deaths in 1911 and 7,433 with 690 deaths in 1910. Dr. FINLAYSON, Government Pathologist, was seconded for special anti-malarial duty in connection with the Malaria Commission referred to in my report for 1911. He commenced work in March, 1912. His reports have been separately printed.

The number of children examined for enlarged spleen were:—

Singapore	...	...	...	...	1,694
Penang	...	...	...	...	—
Province Wellesley	...	...	...	...	800
Dindings	...	...	...	...	8
Malacca	...	...	...	...	270
					<hr/> 2,772 <hr/>

The percentage affected was Singapore 7·2 per cent, Province Wellesley 11 per cent, Malacca 70·37 per cent and Dindings 90 per cent. Seventy-seven thousand and five hundred grains of quinine were distributed free in Singapore, 42,432 in Labuan and nearly 16 lbs. in Malacca. A full report of all anti-malarial work and the cost, etc., has been sent to the Home Advisory Board for Tropical Research.

18. *Ankylostomiasis*.—There were in all 919 patients treated in the hospitals of the Colony for the affection with 173 deaths, compared with 619 and 150 deaths in the preceding year. It is impossible to give an approximate number of the inhabitants suffering from this worm as no systematic steps are yet taken to discover the ova in the large number of estate and mine labourers who are known to be the greatest sufferers. Attention is being paid to the matter throughout the Colony. Some interesting and original notes of the treatment of *Ankylostomiasis* by Dr. KEITH, Physician to Tan Tock Seng's Hospital, will be found at the end of Dr. MCVAIL's report upon that Hospital in Appendix A, and Dr. WHITTLE, Medical Officer, Province Wellesley, in a report upon the disease printed in Appendix C, makes some pregnant remarks.

19. Hospitals and work done in all Settlements:—

Year.	Number of Patients Treated.			Number of Deaths.			Percentage of Deaths to Total Treated.		
	Europeans.	Natives.	Total.	Europeans.	Natives.	Total.	Europeans.	Natives.	Total.
1909 ...	1,398	28,868	30,266	70	3,565	3,635	5·01	12·35	12·01
1910 ...	1,463	34,221	35,684	64	4,465	4,529	4·37	13·05	12·69
1911 ...	1,702	45,260	46,962	82	6,042	6,124	4·82	13·33	13·04
1912 ...	1,794	40,420	42,214	87	4,566	4,653	4·85	11·29	11·02

Hospital accommodation needs extension at various centres in view of the steadily increasing population.

General Hospital, Singapore.—This Hospital was again over crowded during portions of the year, especially the native wards and from these latter 80 patients were transferred to the Beri-Beri Hospital, Pasir Panjang, to relieve the congestion. Provision has been made in next year's estimates for further accommodation and the rebuilding of the native wards with a new operation theatre.

The installation of electric light and fans for the European wards is near completion and a new X-ray apparatus is on its way from Europe.

A new appointment, Surgeon to the Hospital, has been sanctioned and Dr. GRAY took up the duties, temporarily, on 13th June. The holder of this appointment will teach Surgery in the Medical School.

Tan Tock Seng's Hospital, Singapore.—The number of in-patients treated at Tan Tock Seng's Hospital is as follows :—

1909	...	...	...	...	...	8,858
1910	...	...	...	...	...	9,978
1911	...	...	...	...	...	13,398
1912	...	...	...	...	...	13,274

Steps are being taken for the erection of new servants' quarters and to take over for patients the ward they now inhabit.

Lunatic Asylum, Singapore.—The average number of patients resident have steadily risen from 292 in 1907 to 393 in 1912, the latter number straining the accommodation to the extreme. The question of building a new asylum or erecting wards for chronic and irrecoverable patients at the Tanjong Rambutan Asylum, Federated Malay States, is under consideration.

Additions to the nursing staff of both Singapore and Penang General Hospitals have been sanctioned.

Durian Daun Hospital, Malacca.—New European wards are to be built next year and when completed will be placed in nursing charge of a sister and two probationers.

Dr. GRAHAM, F.R.C.S., has been appointed Honorary Surgeon to this hospital

Jasin Hospital, Malacca.—This hospital is to be rebuilt on a larger scale and upon a healthier site in 1913.

20. The total treated and deaths in the hospitals of the Colony for some of the more important diseases I have touched on are shown in the subjoined statement with the corresponding diseases and deaths in 1911 :—

Disease.	1911.		1912.	
	Total treated.	Deaths.	Total treated.	Deaths.
Malarial Fever	12,029	1,014	9,474	660
Dysentery	2,268	996	1,845	654
Diarrhœa	1,146	332	940	235
Beri-beri	2,152	242	2,032	293
Phthisis and Tuberculosis ...	1,095	576	1,111	564
Enteric	186	102	133	63
Ulcers	4,359	8	4,232	3
Venereal Diseases	2,789	40	3,522	39
Ankylostomiasis	619	150	919	173

The revenue collected from all hospitals and dispensaries for treatment bills is as follows:—

Settlement.	Estimated.		Actual.	
	1911.	1912.	1911.	1912.
	\$	\$	\$	\$
Singapore and Labuan ...	50,400	60,500	67,806	61,215
Penang and Province Wellesley ...	14,000	15,000	20,928	22,470
Malacca	1,300	5,500	8,195	8,275
Total ...	65,700	81,000	96,929	91,960

21. *Police Force*.—In Singapore there were 3,605 attendances of out-patients compared with 5,300 in 1911, a decrease of 1,695.

Of these 565 were sent to the General Hospital for treatment, of whom 18 were Europeans. 334 recruits were examined during the year as to their fitness for service; 58 of these were rejected.

22. *Estates*.—The number of estates of over 25 acres, mostly under rubber, amount to 234 in the whole Colony. The total number of hospitals and dispensaries among them is 52 and these had a total of admissions and attendances of 38,968. The labourer population on 31st December, 1912, was given as 39,925.

During the year 652 labourers died on estates, 183 being from malaria. This figure gives a false idea of the death-rate as many estates send their sick to Government Hospitals; many sick drift to Government hospitals without information being available as to from whence they come; and many others find their way to the bigger towns broken down and eventually die in the pauper hospitals. No special health officers have yet been appointed for estate work though such appointments are under consideration. The visits of the district Medical Officers are of necessity irregular and at long intervals, so no reliable figures are at present obtainable. A scheme for group hospitals has been proposed for Malacca whereby Government will undertake the administration and working of hospitals to be provided for all estates in the Settlement on a scale of one hospital for about every seven-mile radius of territory. The difficulties of satisfactorily financing the scheme have been practically surmounted and a commencement should be made in 1913. There is every hope of the scheme being a success especially as the estates become older and their labour population more fixed and constant.

23. *Out-Door Dispensaries*.—Twenty-eight thousand five hundred and thirty-three patients were treated in the 11 out-door dispensaries of the Colony, as compared with 28,782 in 1911. A second out-door dispensary for Singapore is in process of building.

24. *Vaccination*.—Twenty-six thousand and eighty persons were vaccinated during the year, as compared with 74,525 in 1911. The large increase in 1911 was due to the small-pox outbreaks in the three Settlements and the special vaccinations performed. Saigon lymph was used throughout the year and gave satisfaction. 4,254 vaccinations were performed by other than Government vaccinators. This number is understated for undoubtedly many vaccinations are not registered. One extra vaccinator was sanctioned for Penang during the year. The vaccination by Vernacular School Teachers in Malacca continued whilst the outbreak of small-pox lasted, but after the epidemic ceased they were unsuccessful in getting subjects. In all they vaccinated 2,272 people, as compared with 8,241 in 1911. At my suggestion the Government has arranged that all children, before admission to the schools of the Colony, produce their vaccination certificate. This was an old rule but had not been observed for years.

25. *Quarantine*.—The number of passengers and crew examined on arrival in Singapore was 409,328 and 130,349, respectively, as compared with 427,409 and 110,882, respectively, in 1911. The disinfecting launch "Hygeia" was in use throughout

the year. An additional launch has been asked for and sanctioned for 1913. 56,726 passengers were landed on St. John's Island during the year, the largest number since the station was opened. The maximum number in residence on any one day was 4,329. A European trained nurse was appointed to St. John's Island from 24th October, 1912.

In Penang 222,616 passengers and 64,757 crew were examined, as against 215,815 and 61,336, respectively, in 1911. A disinfecting launch similar to the "Hygeia" has been ordered for Penang but will not be available until 1913. At the Quarantine Station, Pulau Jerejak, 55,493 passengers were landed, as compared with 134,957 in 1911. A Jewel Pressure Filter was installed at this station during the year and analysis of the water shows satisfactory filtration.

26. *Government Analyst's Department.*—The revenue collected by the Analytical Department at Singapore and Penang was \$16,762, compared with \$18,385 in 1911, a decrease of \$1,623. The department in Singapore was short-handed during seven months of the year on account of officers on leave, a considerable amount of revenue-producing work had to be refused in consequence.

An interesting counterfeiting case on a large scale involved the attention of the Singapore Department and some bank notes were prepared in the laboratory from the chemicals and plant seized, for the information of the Court. These notes were reported to be passably good copies.

A new laboratory is to be provided for Penang in 1913.

27. *Medical School.*—The number of students continues to increase and there are now a total of 125 on the roll. Of these 82 are going through the full course and 43 are taking a two years' course as hospital assistants.

Eight students obtained their diplomas as licentiates, making a total of 31 since the establishment of the school. All immediately obtain work in their profession. The supply is not equal to the demand nor is it likely to be for some years to come. Since the entrance examination has been raised to the status of the Senior Cambridge Local Examination there has been a general improvement in the quality of students taking up the full course.

A sum of \$124,800 obtained by public subscription has been received by the Council of the School with which to found a Professorship to be called the King EDWARD VII Professorship, and arrangements are being made to fill the post. The holder of this chair will teach physiology and will be in addition to the ordinary staff.

A hostel for students from the Federated Malay States will shortly be built. This will fill a long-felt want as the difficulty of obtaining suitable accommodation for students in private tenements near the school has been great.

Dr. KEITH remained in charge of the school throughout the year.

28. *Pathological Department.*—Dr. W. M. SCOTT arrived from England on the 21st February, 1912, to relieve Dr. FINLAYSON as Government Pathologist and Bacteriologist, this latter officer being seconded for service under the Anti-Malaria Committee from 1st March.

Assistant Surgeon ANDO, assistant to the department, was lent to the Johore Government for five weeks' work in connection with Japanese-managed estates and their sanitation.

One thousand eight hundred and forty autopsies were performed during the year, as compared with 2,338 in 1911 and, in addition, a large amount of highly technical bacteriological work has been carried out by the department.

29. *Medical Department, Labuan.*—The birth and death-rates were 31.80 and 18.84, respectively, against 28.87 and 27.97 in 1911. The estimated population was 6,634. There were 125 deaths registered, the chief causes being malaria (34), tuberculosis (17), old age (16), beri-beri (3) and dysentery (3). No epidemic disease occurred during the year. 221 patients were treated in the hospital, as compared with 296 in 1911 and 338 in 1910, a decrease of 117 for the two years.

30. *Miscellaneous.*—Fifty-four medical practitioners were registered under the Medical Practitioners Ordinance, making a total of 303 on the Register on 31st December, 1912. Seventy-eight licences were issued to medical practitioners, chemists and dentists under the Deleterious Drugs Ordinance. In future unqualified dentists will not be licensed. Eighty-four licences under the Poisons Ordinance were granted.

The moneys collected on account of quarantine charges and disinfection certificates amounted to \$42,590. The total revenue collected from other sources excluding Hospital treatment bills referred to in paragraph 22 are as follows:—

			\$	c.
Births and Deaths Registration	...	...	1,071	50
Bills of Health	...	...	13,130	00
Hide Certificates	...	...	396	00
Coffin Certificates	...	...	470	00
Total ...			\$15,067	50

Owing to representations made by the Pharmaceutical Society of Great Britain the regulations for the chemist's course at the Medical School and elsewhere were amended; the School Syllabus at Pages 36–37 gives full details.

The registration of births and deaths within Singapore Municipal limits as also vaccination within the same limits are shortly to be transferred to the Municipal authorities.

31. *Staff*.—Dr. F. B. CROUCHER, who was in charge of the Department until my return from leave on the 10th February, proceeded on leave on the 19th February and returned to his substantive post at the General Hospital on the 16th September.

Dr. W. H. FRY returned to the Federated Malay States on the 2nd October, 1912, on relief by Dr. CROUCHER.

Dr. W. S. SHEPPARD, Medical Officer in charge of Officials, proceeded on leave on the 4th October, 1912, and Dr. W. A. TAYLOR from Penang took over his duties.

Dr. G. E. BROOKE, Port Health Officer, Singapore, proceeded on leave on the 3rd November and was relieved by Dr. A. MATHIESON, Assistant Port Health Officer, who was himself relieved by Dr. D. BUCHANAN, D. P. H., from the General Hospital, Singapore.

Dr. J. GRAY, Medical Officer in charge of Tan Tock Seng's Hospital, returned from leave on the 7th June and took up temporarily the duties of the new post of Surgeon to the Singapore Hospitals.

Dr. LIVESEY, Assistant Principal, Medical School, resigned on 31st January.

Dr. KENNEDY was transferred from Tan Tock Seng to be Assistant Principal, Medical School, on 22nd May.

Dr. MCVAIL took over charge of Tan Tock Seng from Dr. KENNEDY.

Dr. N. W. FURNIVAL, Resident Medical Officer, St. John's Island, was transferred to Kelantan on the 1st June, 1912, being succeeded by Dr. A. SMART who was locally engaged.

Drs. MCVAIL, SAYERS and TAYLOR were promoted to the supernumerary grade on 1st July, 3rd July and 4th November respectively.

Dr. J. C. C. FORD, Port Health Officer, Penang, was transferred to the Negapatam Coolie Dépôt on 16th March and was succeeded by Dr. LOMAS.

Dr. SAYERS succeeded Dr. LOMAS, deceased, as Port Health Officer, Penang, on 3rd July.

Dr. E. D. WHITTLE proceeded on leave on the 13th December, and Dr. R. D. FITZGERALD, from the Penang General Hospital, relieved him.

Drs. HICKEY and SHARP who arrived in the preceding year and Dr. N. W. STEINBERG, who arrived on 29th April, resigned the service.

Dr. R. F. PRIESTLEY was boarded out of the service on account of ill-health from the end of June.

The following new Medical Officers arrived during the year :—

- Dr. E. K. LOMAS, on 15th February, 1912.
 „ F. R. SAYERS, on 27th April, 1912.
 „ W. A. TAYLOR, on 27th April, 1912.
 „ H. G. HOLDBROOK, on 29th April, 1912.
 „ N. W. STEINBERG, on 29th April, 1912.
 „ A. G. SMART, on 29th May, 1912.
 „ D. BUCHANAN, on 25th June, 1912.
 „ R. D. FITZGERALD, on 16th July, 1912.
 „ K. SIMPSON, on 9th October, 1912.
 „ J. H. TENNENT, on 6th November, 1912.
 „ J. HARRISON, on 9th November, 1912.

Excepting Drs. LOMAS and SMART all the Medical Officers on arrival were attached to the General Hospitals either at Singapore or Penang.

32. I append the following reports :—

- (a) Singapore Hospitals.
- (b) Penang Hospitals.
- (c) Province Wellesley Hospitals.
- (d) Malacca Hospitals.
- (e) Hospitals for Women.
- (f) Out-door Dispensaries.
- (g) Vaccination.
- (h) Quarantine.
- (i) Government Analyst's Department.
- (j) Medical School.
- (k) Pathological Department.
- (l) Labuan Report.

I append also the following returns from Singapore, Penang, Province Wellesley, Malacca and Labuan :—

- (1) Statistics of Population.
- (2) Meteorological Returns.
- (3) Nosological Returns.

W. GILMORE ELLIS,
Principal Civil Medical Officer, S. S.

SINGAPORE, 6th June, 1913.

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APPENDIX A.

SINGAPORE.

General Hospital.

REPORT BY DR. F. B. CROUCHER, *Senior Medical Officer-in-charge.*

1. *Hospital Buildings.*—No works of importance were carried out during 1912.

A beginning was made with the supply of electric light to the hospital, by means of an overhead cable from Tanjong Pagar Dock, which is to replace the old gas supply. Electric fans are also to be put in.

2. *Staff.*—I returned from leave on September 15th, relieving Dr. FRY who had been in charge for 16 months.

The following Medical Officers were attached to the hospital during the year:—

Dr. J. J. HICKEY resigned on 29th February, 1912.

Dr. N. W. STEINBERG arrived on 29th April, 1912, and resigned on 31st August, 1912.

Dr. H. G. HOLDBROOK arrived on 29th April, 1912.

Dr. J. R. MCVAIL was transferred to Tan Tock Seng's Hospital on 20th May, 1912.

Dr. J. GRAY was appointed Surgeon on 13th June, 1912.

Dr. R. F. PRIESTLEY was invalided on 18th June, 1912.

Dr. D. BUCHANAN arrived on 25th June, 1912, and was transferred to the Port Health Office on 9th November, 1912.

Dr. K. SIMPSON arrived on 9th October, 1912.

Dr. J. HARRISON arrived on 9th November, 1912.

Now that there appears to be some finality reached to the resignation of Medical Officers it may be possible in future to enable all new men to go through a course of Tropical Medicine before leaving Europe which is desirable.

3. *Nursing Staff.*—Sister M. L. BRODRICK arrived on 21st July, and Sister A. BOYES on 28th August; Sister B. M. WATSON resigned on July 31st, Sister BLAIR on June 16th, and Sister TAIT was transferred to Penang on April 20th.

Nurse Probationer M. JOSE was appointed on January 16th, and was transferred to Penang on March 6th.

Nurse Probationer R. WALLS was appointed on March 10th.

"	"	E. W. HENDERSON	was appointed on March 16th.
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"	"	M. RAMSAY	"	"	May 1st.
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"	"	E. A. SKADING	"	"	July 8th.
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"	"	H. F. MORTON	"	"	July 1st.
---	---	--------------	---	---	-----------

"	"	M. VAUGHAN	"	"	June 15th.
---	---	------------	---	---	------------

"	"	A. SUMNER	"	"	December 2nd.
---	---	-----------	---	---	---------------

"	"	C. LLOYD	"	"	June 19th.
---	---	----------	---	---	------------

"	"	E. MCLENNAN	resigned on March 10th.
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"	"	R. WALLS	"	March 14th.
---	---	----------	---	-------------

"	"	W. COWAN	"	June 30th.
---	---	----------	---	------------

"	"	A. CORNELIUS	"	June 30th.
---	---	--------------	---	------------

"	"	M. VAUGHAN	"	September 30th.
---	---	------------	---	-----------------

"	"	A. F. KING	"	September 30th.
---	---	------------	---	-----------------

During the year 13 Sisters and 9 Nurse Probationers were admitted to hospital some of them being admitted on several occasions. Eighteen cases were for malaria and others were for minor ailments.

4. The Senior Students of the Medical School have carried out a great deal of the minor laboratory work of the hospital such as examination of blood and sputa.

5. *Subordinate Staff*.—Constant changes took place amongst the servants, 49 new servants being taken on during the year. Thirty-seven servants were admitted to the hospital during the year chiefly for malaria.

6. Five hundred and three cases were sent in by the Police for treatment as free cases.

7. Comparative table showing total number of patients treated in all wards during the past five years (exclusive of maternity patients):—

Year.	European Wards.	Died.	Percent-age.	Native Wards.	Died.	Percent-age.
1908 ...	681	42	6.17	3,689	385	9.08
1909 ...	793	33	4.16	3,311	256	7.75
1910 ...	832	33	3.97	3,818	368	11.69
1911 ...	844	39	4.62	4,564	485	10.62
1912 ...	749	39	5.21	3,584	361	10.07

Of the above 39 European ward deaths, 8 took place within 48 hours of admission while 100 native deaths occurred within the same period of time.

First and Second Class Wards.

8. The first-class wards were as usual overcrowded at intervals during the year, such overflow of patients while awaiting their turn for admission having to be treated in the "seamen's" wards.

9. The question of increasing the existing number of beds is under consideration.

10. The chief diseases for which patients sought admission to the first and second-class wards were as follows, and a comparative statement with the past four years is also shown. Patients in these wards, it should be said, include Europeans and better class natives.

Disease.	1912.	1911.	1910.	1909.	1908.
Malarial Fever ...	221	239	211	201	111
Venereal Disease ...	74	67	30	55	60
Injuries ...	104	66	48	44	55
Dysentery ...	35	34	23	30	27
Alcoholism ...	16	14	7	13	19
Enteric Fever ...	21	14	9	23	22
Phthisis ...	10	15	15	11	14
Appendicitis ...	3	16	8	11	12
Liver Abscess ...	2	6	5	...	7

11. Other diseases of interest were:—Dengue 2, Blackwater Fever 3 with 2 deaths, Burns 2, Beri-beri 2, Cardiac Diseases 3 with 3 deaths, Hepatitis 2.

12. The chief causes of deaths were:—Enteric Fever 4, Phthisis 1, Dysentery 3, Malaria, Sub Tertian 2, Carcinoma of Liver 1, Septicæmia 1, Cerebral Hæmorrhage 1, Beri-beri 1, Blackwater Fever 2, Cirrhosis of Liver 1, Peritonitis 2, Pneumonia 3, Enteritis 2.

13. *Operations.*—There are 113 operations under general Anæsthesia performed during the year. The chief were:—Radical cure of Hernia 5, Strangulated Hernia 1, Liver Abscess 1, Appendicectomy 1, Excision of head of radius 2, Trephining of skull 1, Tracheotomy 1, Exploratory Laparotomy 1, Excision of Hæmorrhoids 19.

14. Venereal diseases show a further increase on those of previous years, but taking into consideration the bad effects which so frequently follow on these diseases if neglected I do not think that such patients seeking hospital treatment should be discouraged.

15. The number of patients admitted for other diseases remains about the same, but there was a considerable increase in the number admitted for injuries.

16. Wasserman reactions were undertaken by the Government Pathologist systematically when required, and have been of great service in diagnosing obscure cases.

Native Wards.

17. These were overcrowded at times during the year, the maximum number on any one day being 214. Eighty patients were transferred to Pasir Panjang Hospital to relieve the congestion.

18. The chief diseases admitted, with a comparison with former years, were as under (the numbers including all native ward patients whether Police or otherwise):—

Disease			1912.	1911.	1910.	1909.	1908.
Malarial Fever	...	...	829	1,616	1,117	736	858
Injuries	...	...	1,017	865	889	768	809
Venereal Disease	...	...	271	278	371	246	284
Dysentery	...	...	124	149	119	130	158
Enteric Fever	...	...	37	76	42	69	101
Beri-beri	...	...	100	68	90	80	126
Phthisis	...	...	59	43	86	108	91
Pneumonia	...	...	46	33	...	54	23
* Cholera	...	...	5	13	...	5	2
* Plague	...	...	6	7	...	2	...
* Small-pox	...	...	1	2	7	...	1

* Transferred to Quarantine Camp.

19. Other cases included Cardiac Disease, 16 with 10 deaths; Bright's Disease, 3 with 1 death; Ankylostomiasis, 17 with 4 deaths; Meningitis, 3 with 2 deaths; Myelitis 1; Abscess of Liver 1.

20. The chief causes of death were:—Malaria 72, Dysentery 42, Enteric 18, Beri-beri 26, Tetanus 5, Empyema 2, Phthisis 25, Peritonitis 8, Injuries 34.

21. Admissions for Malarial fever show a large reduction and account for 72 deaths as against 111 in 1911. Blood films are taken of all patients suspected of having malaria, on admission. 226 of the total number were diagnosed definitely as suffering from malignant malaria (Sub Tertian) and accounted for 33 deaths.

22. As in the European wards there was a large increase in the number of admissions for injuries, which amounted to 1,017. Twenty-six cases of beri-beri were transferred to the Pasir Panjang Hospital.

23. Operations under anæsthesia in the Native wards numbered 314. The chief operations were :—On Rectum 5, Appendicectomy 1, Laparotomy 16, Amputations 36, for Abscess 49, Radical cure of Hernia 5, Strangulated Hernia 5, Liver Abscess 1, Removal of Tumour 1.

Native Police.

24. There were 547 admissions to Hospital, as compared with 748 in 1911. The chief causes of admission were :—Malarial Fever 190, Venereal Disease 50, Malingering 1, Ulcers 22, Bronchitis 21, Dysentery 19, Synovitis 7, Conjunctivitis 10, Phthisis 2.

These figures show a large decrease in the number of admissions for malaria.

Four deaths occurred among the Police, viz., Malaria and Pneumonia 1 each, Ankylostomiasis 2.

The nationalities of those admitted were Sikhs 212, Malays 131, Tamils and other Indians 157 and Chinese 47.

Maternity Wards.

25. The total admissions were 263, as compared with 233 in 1911.

The nationalities of those admitted were :—

Europeans	...	57	Sikhs	...	19
Eurasians	...	8	Eurasian Jews	...	6
Chinese	...	123	Singhalese	...	5
Tamils	...	28	Punjabi	...	1
Japanese	...	15	Annamite	...	1

This shows a large increase, just over double, in the number of Chinese patients, of whom there were 61 in 1911.

Two Europeans and 94 natives were admitted as free cases.

Thirty-two patients were attended by their own medical men.

The deliveries included 46 European infants, 20 males and 26 females.

The native infants were 58 males and 84 females.

Nature of cases :—

Uncomplicated	...	191	Breech	...	2
Tedious and Forceps	...	15	Post Partum Hæmorrhage	...	2
Adherent Placenta	...	3	Prolapse of cord	...	3
Occipito Posterior	...	6	Abortion	...	3
Transverse...	...	3	Twins	...	1 case.

The average weight of the European infants was 7 lbs. 9 $\frac{3}{4}$ ozs : that of the native infants 6 lbs. 12 ozs.

Fourteen infants were still-born, all natives.

There were three deaths, all among natives from Endocarditis 1, Puerpural Sepsis 1, Uræmia 1.

The number of native midwives under training during the year was 10. Of these 5 obtained certificates of competency, one was dismissed as unfit and 4 remained under training at the end of the year.

Annual Report on the Health of the Police Force in Singapore for 1912.

BY DR. W. A. TAYLOR, *Police Surgeon.*

1. For the total number of the Force attending the out-patients' room at the Central Station *see* (Table *A*) below.
2. The maximum number seen in one day was 37 and the minimum 7.
3. Of these out-patients 565 were sent to the General Hospital. Table *B* shows their disease.
4. Four deaths occurred during the year 1912, viz.:—
 - 1 Malay from Malaria.
 - 1 Malay from Pneumonia.
 - 2 Sikhs from Ankylostomiasis.
5. Tables *C* and *D* show the incidence of recruiting.
6. The Police Stations both town and country were inspected from time to time and recommendations for sanitary or other improvements were made where considered necessary.
7. Dr. SHEPPARD was in charge from 1st January to 2nd October when I took over.

TABLE *A*.

The total number of the Force attending the out-patient room at the Central Station since 1907:—

1907.	1908.	1909.	1910.	1911.	1912.	Decrease.	Increase.
3,518	4,454	3,924	5,796	5,300	3,605	1,695	...

TABLE *B*.

Return of admissions to Hospital:—

Europeans and Eurasians.	Sikhs.	Malays.	Tamils and others.	Chinese.	Total.
18	212	131	157	47	565

The chief causes of admission were:—

—	Europeans.	Sikhs.	Malays.	Tamils and other Indians.	Chinese.
Malaria ...	3	78	40	64	8
Venereal ...	2	18	19	9	4
Bronchitis ...	Nil	8	6	6	1
Dysentery ...	Nil	15	1	3	Nil
Malingering ...	Nil	1	Nil	Nil	Nil
Ulcers ...	Nil	7	4	10	1

The remainder were suffering from abrasions, wounds, etc.

All amongst Malays, 4 of whom were sent to Pasir Panjang for treatment.

TABLE C.

Return of recruits who joined the Force during the year 1912:—

Europeans.	Eurasians.	Sikhs, including additional constables.	Malays.	Bengalis, including Pathans, etc.	Tamils.	Chinese.	Total.
2	2	82	101	39	4	46	276

TABLE D.

Return of applicants rejected by the Police Surgeon during the year 1912:—

Sikhs.	Malays.	Other Indians, Pathans and Bengalis.	Tamils.	Chinese.	Total.
17	18	10	2	11	58

Prison Hospital.

REPORT BY DR. W. A. TAYLOR, *Medical Officer*.

1. The sanitary condition of the Prison is good and the health of the prisoners satisfactory.

2. The number of admissions to hospital was 1,010 and the average daily sick 42, against 1,041 and 50 in the previous year.

3. *Civil Prison*.—The total population was 3,636 and the average daily number 95. There were 35 admissions to hospital with an average daily sick of '98. Four died.

4. *House of Detention*.—The total population was 488 and the average daily number 35. There were 112 admissions to hospital with 19 deaths. The average daily sick was 4'6. The majority of these men are debilitated and diseased estate coolies, they come into Prison in a most wretched condition and undoubtedly increase the death-rate.

5. *Criminal Prison*.—The total population was 3,218 and the average daily number 770. There were 863 admissions to hospital with 18 deaths, giving a death-rate of '5 to Prison population.

The average daily sick was 36'7.

6. Table showing admissions and deaths, etc., of various classes of prisoners:—

—			Criminal.	Civil.	Vagrants.
A.	Total population	...	3,218	3,636	488
B.	Average daily number	...	770	95	35
C.	Total treated in hospital	...	901	39	118
D.	Percentage C to A	...	27'9	1'07	24'1
E.	Total deaths in hospital	...	18	4	19
F.	Percentage E to C	...	1'9	10'2	16'1

7. Diarrhœa, colitis and dysentery form the bulk of the admissions to hospital. There were 262 cases and 9 deaths.

8. *Neuritis*.—Twenty-seven cases were treated in hospital.

9. *Tuberculosis*.—There were 20 cases with 10 deaths.

Twelve cases occurred amongst vagrants and civil prisoners all of whom had the disease on admission to Prison. Eight cases occurred amongst the criminal population, of whom 3 came into Prison with the disease.

10. *Beri-beri*.—Only one case was admitted to hospital. A Chinese vagrant on admission to Prison was found suffering from the disease. He died. No case occurred in the Prison.

11. *Enteric Fever*.—There was one case. A Chinese vagrant who contracted the disease outside the Prison. He died.

12. *Eczema Scroti*.—In spite of improved conditions this annoying complaint exists in the Prison though not to a very great extent.

13. *Deaths in Hospital*.—There were forty-one. Eighteen criminals and 23 vagrants and civil prisoners. Twenty-eight of the 41 deaths were due to diseases contracted outside the Prison. Vagrants constituted 19. See attached table.

14. *Suicide*.—There were three, all by hanging.

15. *Executions*.—There were six. All Chinese.

16. *Transfer to Lunatic Asylum*.—There were 7.

17. I took over from Dr. SHEPPARD on 2nd October.

Table showing the causes of death, grades affected, etc., in the Prison.

Grade.	Causes of Death.	Admitted with disease.
Middle 6	Tuberculosis 2	None.
	Cerebral Hæmorrhage 2	...
	Pleurisy 1	...
	Strangulated hernia of stomach into Plural Cavity 1	...
Lower 3	Dysentery 2. Neuritis 1	1
Upper 2	Dysentery 1. Tuberculosis 1	...
Short S. 7	Tuberculosis 2. Dysentery 1	2
	Abscess Lung 1. Pneumonia 1	1
	Malaria 1. Nephritis 1	1
Civil Prison 4	Dysentery 2. Tuberculosis 1	3
	Heart Disease 1	1
Vagrants 19	Chronic Malaria 6	6
	Tuberculosis 4	4
	Dysentery 2. Pneumonia 2	4
	Cirrhosis Liver 1. Anæmia 1	2
	Colitis 1. Beri-beri 1	2
	Enteric Fever 1	1

Annual return of opium smokers, etc., in the Prison Hospital, Singapore, for the year 1912 :—

Total Admissions to Hospital.	Admissions, Opium Smokers.	Admissions, Opium Eaters.	Admissions, Morphia Injectors.	Admissions, Morphia Eaters.	Whether illness is attributable to or enhanced by	
					Opium.	Morphia habit.
1,010	194	1 Indian.	3	...	13	...

Return of admissions for Venereal Disease in Prison Hospital in the year 1912 :—

Sex.	No. admitted 1912.	Prop. Prostitutes.	Remarks.
Male ...	26	...	...
Female ...	...	...	...

Tan Tock Seng's Hospital, Singapore.

REPORT BY DR. J. R. MCVAIL, *Acting Medical Officer.*

1. *Work done.*

Remained on 31st December, 1911	...	...	612
Admitted during 1912	...	...	12,662
Total			13,274
Discharged	...	...	11,071
Died	...	...	1,638
Remaining on 31st December, 1912	...	...	565

2. The average daily sick was 598·10, against 608·81 in 1911.

3. The percentage of deaths to total treated was 12·26, against 14·33 in 1911 and 15·71 in 1910.

4. There were 1,638 deaths during the year. Of these, the number dying within 24 hours of admission was 279. Deducting these the death-rate is 10·10.

5. The average daily stay in hospital of those discharged was 11·9 days, of those dying 11·6 days, of those remaining 122·3. Of those remaining many are blind and incurable. This hospital is their only home. One of the hospital wards is set apart for the treatment of chronic nerve cases such as Hemiplegia and Paraplegia. There is naturally little hope of recovery among them. Another ward is solely for the blind. It is always full. The tubercular ward also contains many extremely chronic cases.

6. The admissions, with the exception of last year, when there were 12,826, are the largest on record. This hospital is in the position of having to receive an enormous number of cases from outside the Settlement of Singapore. From the 19th July to the 18th August out of 983 admissions 185 were of persons resident outside the Settlement. There were probably many more who either would not or could not give us information as to where they came from, part of this being no doubt due to the fear that they might be required to pay for their stay in Hospital. I may mention that the hospital is free. There can be no doubt that about one-fifth of our cases come from outside. As it is important to know whether this is an increasing or a decreasing factor, an attempt is being made this year to keep as careful a record as possible of such admissions.

7. The principal diseases treated were:—Malaria, Ulcers, Venereal Diseases, Dysentery, Beri-beri, Phthisis, Injuries, Abscess, Pneumonia, Bubo, Bright's Disease, Rheumatism, Bronchitis, Hepatic Cirrhosis, Enteritis, Enteric Fever, Ankylostomiasis, and Corneal Ulcer. Details of some of these will be given below.

8. The admissions from Malaria numbered 4,014. Since July systemic blood examinations have been carried out. 2,415 blood films were examined with the following result:—

Subtertian	...	...	...	...	965
Benign Tertian	...	...	...	...	254
Quartan ...	...	...	...	...	116
Mixed infections	...	...	...	...	106
Negative ...	...	...	...	...	974
					<hr/>
					2,415
					<hr/>

There have been 272 deaths from Malaria during the year, giving a death-rate of 6·7 per cent:—

<i>Type of Malaria.</i>					<i>Deaths.</i>
—					—
Subtertian	...	...	...	...	152
Quartan ...	...	...	...	...	3
Benign ...	...	...	...	...	0
Malarial Cachexia	...	...	...	...	37
Unclassified	...	...	...	...	80
					<hr/>
					272
					<hr/>

From July 1st to December 31st, 1,890 patients were admitted suffering from Malaria. Of these the origin of 1,750 was traced. 713 came from outside the island of Singapore within six months of admission. Through the courtesy of Dr. FINLAYSON I am able to attach a table showing the districts from which they came and the time within which they were admitted to hospital. Naturally the further the country the smaller the number of cases; at the same time there are differences which are too great to be explained on this hypothesis alone. Only one case came from Ceylon, against 250 from Johore; from Perak, Seremban, Kuala Lumpur and Tringganu 17 cases were admitted; from Pulau Bulang, a Dutch Island, 19. This shows in an unmistakable manner that the hospital is being used to a large extent by coolies coming from districts that do not contribute directly or indirectly to its support. It also increases the apparent death-rate of Singapore. Out of 250 cases coming from Johore, 20 died, 9 of those within 24 hours of admission. The death-rate among the Johore cases is 8 per cent. The death-rate of all the other cases is 6·6 per cent. I may draw attention under this heading to the great increase in the number of Japanese admitted.

Admissions of Japanese:—

1900	...	...	...	...	...	3
1901	...	...	...	...	...	5
1902	...	...	...	...	...	7
1903	...	...	...	...	...	8
1904	...	...	...	...	...	7
1905	...	...	...	...	...	10
1906	...	...	...	...	...	20
1907	...	...	...	...	...	43
1908	...	...	...	...	...	49
1909	...	...	...	...	...	31
1910	...	...	...	...	...	110
1911	...	...	...	...	...	172
1912	...	...	...	...	...	344

For 1913 we are trying to trace their origin as far as possible. So great and continuous an increase requires some explanation.

9. Seven hundred and six cases of Dysentery have been treated during the year. There have been 395 deaths, a mortality of 55·95 per cent. The death-rate from this disease remains about stationary from year to year. Every sort and method of treatment has been tried, but unfortunately the severe type of dysentery seen during the late stage of the disease in which our patients come to us is not amenable, in the majority of cases, to medical treatment.

10. Six hundred and sixty-five cases of Beri-beri have been treated during the year, with 138 deaths, giving a mortality of 20·7 per cent. One hundred and ninety-six cases were transferred to Pasir Panjang Hospital. The cases admitted during the year numbered 634. Their nationalities were as follows:—

<i>Nationalities.</i>				<i>Total Admissions.</i>	<i>Deaths.</i>
—				—	—
Chinese	...	...	...	594	135
Malays	...	...	...	18	2
Japanese	...	...	...	17	1
Indians	...	...	...	3	0
Others	...	...	...	2	0

11. There have been 60 cases of Enteric Fever with 37 deaths equal to 61·6 per cent. A death-rate of 60 per cent would seem high to a London Physician accustomed to one of 15 per cent. On the other hand few London Physicians have seen an enteric patient come into hospital with a perforation at least 3 days old and 2 gallons of purulent faecal matter in his peritoneal cavity, which is not an uncommon occurrence here.

The difficulty of diagnosing and treating cases of enteric in a hospital receiving the kind and class of patient that we do, can only be appreciated by actual experience. Fever accompanied with gastro intestinal disturbance is very common. All doubtful cases are treated as possible enterics and put on a milk diet. Our patient immediately sets out to obtain a fuller diet and in most cases he succeeds as the stomach contents at post-mortems show. Needless to say perforation is extremely common. Among our cases it amounted to 31 per cent of all fatal cases, as against an average under home conditions of 9 to 12 per cent. One curious type of case is quite common here which I have never seen at home. At the post-mortem only one, two or three small ulcers are found, all close together, one has perforated, and the others are in course of doing so.

12. There have been 127 cases of Pneumonia with 72 deaths, giving a death-rate of 56·6 per cent.

13. Venereal diseases were as follows:—

	<i>Total.</i>	<i>Deaths.</i>	<i>Percentage.</i>
	—	—	—
Primary and Secondary Syphilis ...	1,043	20	1·9
Gonorrhœal and Syphilitic Arthritis	124	6	4·8
Gonorrhœa ...	122	0	0

During the last four months 22 cases of Syphilis have been treated with intra-venous injections of Neo Salvarsan in conjunction, in every case, with the usual Antisyphilitic treatment. The results have been most gratifying and particularly so in obstinate cases of Syphilitic Arthritis which resisted ordinary treatment. In no case has any serious after-effect been seen, at the most a mild rigor and fever never higher than 102 F°, coming on 2 to 3 hours after the injection and never lasting longer than 4 hours. They have shown perfect willingness to undergo a second injection in the few cases where it has been considered necessary.

The cases treated were as follows:—

Primary Syphilis	...	...	...	...	4
Secondary „	...	...	...	...	8
Tertiary „	...	...	...	...	6
Syphilitic Arthritis	...	...	...	...	4

14. *Ankylostomiasis*.—There have been 248 cases. The figures under this head are much larger than in any previous year. It will probably be still larger next year. This is largely due to the fact that since July systematic search has been made for this parasite in all cases of suspicious anæmia. At the same time it is highly probable that the disease is increasing in the Colony and surrounding States.

Total number of stools examined since July 767:—

Ankylostoma ova found in	...	...	...	389
Round worm „	...	...	...	126
Whip „	...	...	...	57
Round and whip worm „	...	...	...	22
Negative ...	...	...	...	173

15. *Tuberculosis*.—General and Pulmonary. There have been 353 cases of Pulmonary Tuberculosis with 216 deaths, and 53 cases of General Tuberculosis with 16 deaths, giving a death-rate of 57·1 per cent. The cases were of the same hopeless type that is seen in poor law hospitals and asylums at home. The results are practically similar. Since July the sputa of 193 patients have been examined with the following results:—

Tubercle Bacilli found	...	...	...	86
„ „ not found	...	...	...	107
				<hr/> 193 <hr/>

16. *Ulcers*.—There were 2,484 cases. The treatment of these cases is the most unsatisfactory feature of our work. Our patients do not come to be cured but to be relieved. As soon as their ulcers cease to be painful they take their discharge. If we refuse to discharge them they abscond. Much eloquence in many languages is wasted daily in representing to them the folly of their conduct. With unfailing regularity they reappear in the admission room and the never-ending task takes on another coil. Smears from 119 cases were examined microscopically with the results shown in Appendix II.

17. *Lunacy*.—One hundred and twenty-two cases were sent for observation, of whom 95 were certified insane and sent to the Asylum. Since August mental cases under observation have been looked after by trained attendants. The result is that their treatment begins on the day they arrive here and those sent to the Asylum go in much better condition than formerly, many already on the road to recovery.

18. *Medico-Legal*.—Sixty bodies were sent during the year under report by the Coroner for post-mortem examination. 533 police cases were sent for treatment.

19. *Operations*.—In all 941 were performed during the year. There were 846 in 1911 and 583 in 1910. A table showing the results of the more important operations is appended. Appendix III.

20. In the European wards the total number treated was 631, compared with 420 last year. It will be seen that the increase is due to the large number of Japanese who were admitted.

	<i>Europeans.</i>	<i>Japanese.</i>	<i>Eurasians.</i>	<i>Others.</i>
	—	—	—	—
1911	105	172	87	56
1912	119	344	90	78

21. Gas for illuminating and sterilizing purposes was introduced into the operation theatre during the year. In addition to being able to attend satisfactorily to injuries and urgent operation cases during the night, we are now able to sterilize the dressing material that is issued to the wards.

22. *Staff*.—Dr. KENNEDY left for duty at the Medical School on May 20th, since then I have been in charge. Messrs. RODRIGUEZ, APPADURAI, and CARNEGIE have been attached as Assistant Surgeons during the whole year. Mr. FERNANDEZ left for Province Wellesley in May and was replaced by Mr. DE SOUZA. They have done excellent work. Our complement of dressers has been short throughout the year, particularly the hospital assistant grade. There have been constant changes and resignations among them. It is extremely difficult to get a really competent junior dresser to remain on the staff on account of the higher salary that he can get elsewhere.

The pathological work has been carried on by Dr. SCOTT assisted by Mr. BARDHAM and Mr. ANDO.

Dr. GRAY acted as Consulting Surgeon since June. Dr. KEITH was appointed Physician in September. He has taken charge of two medical wards since then.

23. There were two small outbreaks of cholera during the year, the first in June the second in July. There were in all 26 cases. In spite of the closest investigation their origin could not be traced.

Notes on Ankylostomiasis in Tan Tock Seng's Hospital by Dr. R. Keith.

The treatment of Ankylostomiasis as represented in the ordinary text books on Tropical Medicine is a simple procedure. Starvation and the administration of Anthelmintics with purgatives are the usual means recommended. Little or nothing is said as to the great difficulty experienced in getting the Anthelmintics to act nor the length of time it takes to get rid of the parasites.

During the past six months I have had in my wards numerous cases in which the ova of the Anchylostome have been found in the stools. A large number of these, it is true, suffered from other diseases, but I am convinced that WATSON in a recent utterance certainly underestimated the importance of this condition in the Straits Settlements and Federated Malay States, at least as far as Singapore and Johore are concerned. (*See Trans. of Soc. of Trop. Med. Hygiene* VI. No. 3 page 92).

At first, in treating these cases, I followed hopefully the usual methods of administering thymol or eucalyptus oil, but in a very short time I saw that, in anything like severe cases, it would be necessary to adopt more persistent and strenuous measures.

The great difficulty, here, in treating this as well as other diseases is that of keeping the patient sufficiently long in hospital to give any method an adequate trial. After a few days rest patients feel better and demand to be let out of hospital. If one does not allow them to go they at once abscond and more especially if a particularly nauseous medicine is given. In one instance a stock mixture of thymol bismuth carbonate, mucilage and water was made up, the idea being that the bismuth, would help to retain the thymol in the upper part of the intestine longer than would otherwise be the case. During the few days this was being administered, patients getting it were clamouring to go out and some absconded after a few doses.

From a study of my notes on 70 cases who remained long enough in my wards to enable me to draw conclusions as to the result of treatment, I am convinced that a point of great importance is the percentage of hæmoglobin in the blood. SAHLI holds that there is no normal for hæmoglobin in man and that considerable variations in healthy subjects occur. I therefore estimated the percentage in 28 healthy students

by means of Sahli's and Dare's Hæmoglobinometers and found that Dare's instrument gave a reading of 74·6 per cent and that of Sahli 81·7 per cent. In a series from 68 patients in my wards suffering from various diseases, Dare's instrument gave an average of 48·7 per cent whereas Talquist's scale gave 51·5. In another series of 12 patients the following were the figures:—

Talquist	...	...	...	...	45	per cent.
Dare	...	...	...	...	39·6	„
Sahli	...	...	...	...	36·5	„

On the whole Talquist's scale gives a higher reading than the others.

Now in 28 cases where the only condition which could be detected was Ankylostomiasis, the lowest percentage as estimated by Sahli's instrument was 10 and the highest 75. The average was 40.

In my opinion as regards treatment, if the percentage of Hæmoglobin is in the neighbourhood of 60 it may be reckoned that with suitable treatment the ova will disappear in the course of a few days. Between 45 and 55 per cent, treatment will probably be more difficult. Anything below 40 per cent will indicate that great patience will have to be exercised before recovery takes place. It will not be a question of weeks but of months and this is certainly so when the percentage reaches 10 to 20 per cent. Several of these cases with a very low percentage of Hæmoglobin have been under observation and treatment for months. It is true that the general condition improves with diet and rest. The œdema as a rule gradually disappears and the patient soon feels himself better, but the ova, though they decrease in number at first rather quickly, and then more gradually, do not finally disappear for months, while the Hæmoglobin percentage remains about the same level.

I give now particulars of a few cases to illustrate this point.

1. *Sim Ming*.—1912, May 21st, he was admitted to hospital and up to July 24th had been given 4 doses of thymol and 8 of eucalyptus in the usual way.

July 26th, he came under my care and was given an emulsion containing 30 grains of thymol and 30 grains of bismuth carbonate every morning.

July 31st.—The ova were much reduced in number.

August 10th.—Thymol was stopped and methylene blue pills grain 1 were given.

August 17th.—A few ova still present.

August 21st.—One ounce doses of an emulsion of Eucalyptus M XXX of oil to an ounce, were given daily.

September 14th.—A few ova still seen. He got some hours' leave and never returned. His Hæmoglobin estimations were as follows:—

				<i>Talquist.</i>	<i>Dare.</i>
				—	—
July 23rd	...	...	...	30	...
August 8th	...	...	...	30	...
August 29th	...	...	...	35	20
September 14th	...	...	...	30	25

His œdema had disappeared by the time he left, but his hæmoglobin had not improved.

2. *Seng Lee, Rubber Coolie*:—

1912, June 16th, admitted. June 19th ova found. July 3rd came under my care and thymol treatment was given. July 9th eucalyptus treatment given. July 18th stool still contained many ova. July 29th still many ova. August 12th Hæmoglobin (Talquist)—20 per cent. August 17th mist. bismuth et thymol 1 ounce every morning given. After three days patient absolutely refused to take any more.

August 19th.—Hæmoglobin.

Talquist	...	...	...	20	per cent.
Dare under	...	...	...	10	„

August 21st.—Mixt. Eucalyptus 1 ounce every morning.

September 2nd.—Stools contained one ovum in a field on an average.

September 23rd.—One ovum in every 3 fields.

October 2nd.—Average of 7 ova in a slide.

„	10th.	„	7	do.
November	14th	„	8	do.
„	21st	„	7	do.

The hæmoglobin showed no change. Unfortunately I had then to leave for a time and when I returned the patient had gone. It will be seen, however, that he was under treatment for several months without any marked improvement taking place.

3. *Heng Moy*.—This man was in hospital for a week in the beginning of September, 1912, when he absconded. His hæmoglobin was then Talquist 20 per cent, Dare 10 per cent.

1912, October 1st. Re-admitted. He came in with anasarca and grave anæmia, his readings being Sahli 10 per cent, Dare 10 per cent.

Numerous Anchylostome ova were found in his stools and also Ascaris Ova. Albumen was present in his urine but no casts.

October 2nd.—Mixt. Eucalyptus 1 ounce every morning.

„ 5th.—Santonin grains X followed by Mixt. Sennæ Co.

„ 9th.—No round worm ova and anchylostome ova, much fever.

„ 17th.—About 20 ova in a slide.

„ 24th „ 12 Do.

„ 28th.—Oedema gradually decreasing.

November 4th.—Fifteen ova in a slide—eucalyptus stopped—thymol grains XXX.

„ 11th.—Thymol grains XXX—7 ova in a slide on an average.

1913, January 20th.—Anchylostome ova present; also round and whip worm ova.

„ „ 25th.—Santonin grains V.

February 4th.—A. Ova still present. Talquist—35 per cent—Eucalyptus stopped. B. Naphthol grains XXX in powder followed in an hour by Mist. Magnesium sulphate $\frac{1}{2}$ ounce every morning.

February 10th.—No ova.

„ 20th.—Two ova in a slide.

March 3rd.—No ova.

„ 10th.—Two ova in a slide. Much improved and able to do light work.

These cases could be multiplied.

It is not very easy to say what the delay in getting rid of the ova in the stools is due to. It appears to me to be possible that after the worms have all been killed and expelled ova may still linger about the intestine. In the case of a Tamil who suffered from Ankylostomiasis and who died of another condition, six days before his death about 5 ova were present in a slide, and, at the post-mortem examination, only very few worms were found lying about the lower part of the jejunum and no “bites” were seen. There can be no doubt, I think, that these anthelmintics do kill the worms readily. In one case in which eucalyptus oil had been given in the form of Mixt. Eucalypt., at a post-mortem examination performed soon after death the intestinal contents smelt strongly of eucalyptus and the worms were found lying dead in large numbers in the lumen, though some were still alive. It is conceivable that the ova may remain for some time in folds of the large intestine, but it seems unlikely that they would do so for months.

The possibility, of course, must strike everyone who has had much experience of this disease, that, though there is no fresh infection, the embryos may not have completed their circuit from the skin to the intestine at the time of commencing treatment, and that fresh numbers of them may continue to arrive in the bowel by way of the trachea and œsophagus for some time afterwards.

One point having a bearing on the difficulty of treating these cases is the presence of a thick layer of mucus in the upper part of the intestine. This indubitably must help to protect the worms against the anthelmintic.

It seems to me that the subsequent treatment, after we have got the worms, largely, if not entirely expelled, is most difficult and requires infinite patience. We cannot expect these intensely fatty structures to return to a healthy condition quickly and we must have patience while the fat is being replaced by the tissues.

From recent results I should say that B. Naphthol in 30 grain doses the first thing every morning is likely to prove more effectual than eucalyptus or thymol.

Now regarding the question of starving patients while the treatment is being carried on I cannot say that I can see the necessity for it especially if the drug is given the first thing in the morning. It is true that large doses given frequently of these drugs are apt to irritate the mucosa of the stomach and intestines, but I do not see why that should keep us from giving them. All the more likely are we to get at the worms and I have never seen any ill effect follow the use of large doses. I do not think that much food will be found in the upper part of the small intestine five hours after a meal, so that if the drug is given, as I say, the first thing in the morning there is no necessity for starvation.

Some Notes on Dysentery in Tan Tock Seng's Hospital.

By DR. W. M. SCOTT, *Acting Government Pathologist.*

Exceptional opportunity is afforded of studying dysentery both clinically and at autopsy in Tan Tock Seng's Hospital. During the past year 706 cases were treated here for this disease, while in the mortuary 334 cases had it ascribed as the immediate cause of death and in 482 the lesions old or recent were present.

The patients are drawn almost entirely from the coolie class and as a pauper hospital it receives the poorest of these, individuals of feeble physique, obviously diseased, whom employers cannot consider worth spending money on in the hope of their becoming fit and among whom as with debilitated people in general dysentery is very prevalent and severe in type.

There is no striking seasonal incidence in the returns but the second half of the year furnishes rather more cases than the first. Most of the observations which follow depend on a study throughout the year but the cases admitted suffering from dysenteric symptoms during the four months from August to November have been subjected to a special analysis from which the following facts emerge.

Number of cases and Mortality.—There were during this period 142 cases of which 66 died or improved sufficiently to be discharged, a case-mortality of 46·5 per cent.

Nationality.—Of these 117 were Chinese with a mortality of 50 per cent and 25 Tamils with 36 per cent mortality.

Duration of illness before admission.—Among the fatal cases the average duration of the disease before admission to hospital was 49 days: only 4 of them had a history of only one week or less while 36 had been ill for a month or over. Among those cured or relieved 32 days was the average length of illness before admission while 21 of these entered hospital within one week and only 21 had had symptoms for a month.

Duration of stay in Hospital.—The fatal cases were in hospital for an average of 13 days; 10 died within 48 hours and 27 or nearly half the number within a week. Among those who recovered 14 days was the average stay in hospital. Many of these insisted on being discharged from hospital before recovery could be regarded as complete.

Classification.—Of the 142 cases 85 or 60 per cent were purely amœbic in origin. There were in addition 19 cases in which the amœbic infection was complicated by the presence of ankylostomes and five cases in which a bacillary infection co-existed. Pure bacillary cases numbered 14 or 10 per cent only. There were 11 cases in which the dysenteric symptoms were ascribed to malaria and three cases in which the *Trichomonas Hominis* was the only parasite found. In the remaining 5 cases the diarrhoea with blood and mucus was found post-mortem to be due to such causes as Tuberculosis of the gut or severe Syphilis. The case mortality in the *amœbic* variety was 37 per cent, when complicated by Ankylostomiasis 74 per cent. Of the *bacillary* cases only 3 recovered out of 14, a mortality of nearly 90 per cent. Of the malarial cases one died or 9 per cent. Post-mortem examination was performed in practically all the fatal cases.

The great mortality in the bacillary variety is probably partially due to some of the cases which recovered being really bacillary although the presence of a few amœbæ caused them to fall in this group. The statistics at autopsy extending in the past 6 years to some thousands of cases show that instead of 10 per cent 25 per cent of all cases of dysentery acute and chronic are bacillary in origin. There can be little doubt, however, that acute bacillary dysentery is at least twice as fatal as acute amœbic.

Diagnosis.—The important point in diagnosis is the differentiation of amœbic and bacillary cases. Clinical differences do not exist at the stage in which coolie patients usually present themselves. The number of motions, the appearance of the stools and the general condition of the patient give no indication in my experience as to the variety of the disease. Fever in the absence of malaria is of some value as indicating the bacillary form.

Hitherto I have depended entirely on the discovery of the pathogenic amœba in fresh mucus from the dejecta, and on failure to discover these on two successive days in an obviously acute case have diagnosed the bacillary variety simply by exclusion. The autopsies have justified this procedure hitherto although it has obvious disadvantages.

For the discovery of the amœba recent dejecta are advisable, not more than 3 or 4 hours old: these of course are always to be got in the acute cases. A little experience suffices for the choice of suitable microscopic specimens: they should be as free as possible from fæcal material. The mucus should be gently flattened out between coverglass and slide and examined with a high power dry lens with almost all the transmitted light cut off. I use a Zeiss D. D. with No. 4 ocular, condenser, and iris diaphragm closed up practically completely. The amœbæ can then be readily picked out by their high refraction and in most cases by their movements. Attempts at direct diagnosis of the bacillary variety by agglutination methods have not been successful: little agglutinin develops and this is to be expected since unlike the *B. Typhosus* the *B. Dysenteriae* is not found in the spleen or bloodstream. A well-marked leucocytosis however is of some value as this is rare in the amœbic form while common in the bacillary.

Treatment.—The treatment adopted in this hospital may be roughly outlined as follows:—Severe acute cases with numerous amœbæ in the stools are put on an exclusive milk diet, 2 pints of fresh milk daily, and given 60 grains of Sodium Sulphate every 3 hours. Powdered Ipecacuanha root is administered in 30-grain dose twice daily preceded half an hour by Tincture of Opium 30 minims. This is continued till the stools become fæcal in character when the Sodium Sulphate is reduced to one dose of two drams nightly and a powder consisting of Pulv. Ipecac. gr. ii to gr. v, Pulv. Doveri gr. x and Pulv. Cinnamon. gr. xx is given thrice daily. Bread, soup and raw eggs with sugar are then allowed and this is continued till complete recovery.

Less acute cases commence with the above compound powder and 60 grains of Sodium Sulphate thrice daily.

Chronic cases receive Sulphur Sublim gr. xxx, Pulv. Doveri gr. x thrice daily or a pill containing Mercury, Ipecacuanha and Opium.

In most of the cases after the first week Quinine or Boric Enemata are administered twice daily, two pints from a long rectal tube.

The results considering all the circumstances are satisfactory: the mortality in dysentery during the past year was 55 per cent, but it must be remembered that many of the patients enter hospital in a condition practically desperate: others immediately on a slight amelioration of their symptoms demand discharge, abscond if this is postponed and return in a few days worse than ever: the hospital having uncontrolled access on several sides an extensive trade in undesirable food takes place and patients on an exclusive milk diet are frequently found with large masses of undigested rice, maggot-riddled meat, etc., in their dejecta or, as often happens, in the stomach at post-mortem; many patients also enter hospital in the last stages of starvation.

These circumstances all militate against a low mortality and account to some extent for the above high figure. The figure given however includes cases complicated by such conditions as a co-existent enteric fever, malaria, ankylostomiasis, tuberculosis or pneumonia: excluding these and cases which give a history of many months illness or are dying on admission a much more respectable percentage would be found to recover.

Emetine Treatment.—During the latter part of the year subcutaneous injections of Emetine Hydrochloride have been employed in place of Ipecacuanha root, as recommended by Major ROGERS (B.M.J. 1912 June 22nd, page 1424, August 24th, page 405, Lancet 1912 October 19th, page 1062). The number of cases has been limited by the difficulty of obtaining the drug but a total of 34 patients have been treated in all. Of these 7 died, one with a severe enteric ulceration in addition, two with a severe malaria relapse, one with a septic broncho-pneumonia, one with a large hepatic abscess and two within 48 hours of admission. The usual dose was $\frac{1}{2}$ grain administered twice daily: some cases received 1 grain at a dose and as much as

7 grains within 3 days without untoward symptoms. The total amount employed per case on an average was 4 grains spread over 4 days: more prolonged administration is undoubtedly necessary however. The effects were sufficiently striking, the dejecta which at first consisted entirely of mucus and blood and were swarming with amœbæ became fæcal with only traces of mucus after 3 days in 50 per cent of the cases and by the fifth day in over 80 per cent while living amœbæ were found after the third day in only three cases. The mechanism of this effect is very obscure, a direct action of the drug on the parasite being difficult to conceive unless on the hypothesis of an elective excretion into the colon. But of its activity there can be no doubt and the too glowing accounts in the papers referred to have not succeeded in producing much disappointment as the result of its trial.

With the powdered Ipecacuanha administered as described a similar effect requires on the average 3 days, the stools becoming fæcal on the 4th day with great regularity. In three cases only in a large experience have the symptoms persisted and living amœbæ continued in the dejecta during the administration of Ipecacuanha root. In only one of these unfortunately was it possible to administer Emetine but in this case with distinctly beneficial effect.

It is difficult to account for the unfavourable results obtained by ROGERS with Ipecacuanha root. His figure of $11\frac{1}{2}$ days before the stools became normal is belied by all our experience and this with Chinese patients who suffer much more severely and respond much less readily to treatment than natives of India as is indicated by the death-rate and by the average duration in hospital before discharge.

The disadvantages of the Ipecacuanha root however are distinct: the sickness and vomiting produced may be most distressing and may even in rare cases quite contra-indicate the drug. It has occurred more than once that a coolie prefers absconding unrelieved to repetition of the nauseating dose. Also the amount actually absorbed is always to some extent doubtful when compared with the neat and certain subcutaneous form of administration.

Against the use of Emetine the chief argument is its cost. The employment of drugs at 30 cents a dose in the case of coolies cannot be justified from the stand-point of a correct economy where an almost equally efficient though disagreeable alternative exists. As long as coolies can be replaced for \$30 a head large employers of labour are bound to regard the loss of these from a possibly inadequate treatment with greater equanimity than they would a heavy expenditure on drugs.

It has been thought however that this difficulty might be overcome by employing the crude alkaloids extracted from the root by some process within the power of a competent pharmacist. Dr. DENT, the Government Analyst, has been good enough to interest himself in this and is at the time of writing engaged in simplifying such a process. The uncrystallised mixed alkaloidal salts which he has prepared have been used by subcutaneous injection in 30 cases already and hitherto with excellent results: there have been no disagreeable effects local or general and the specific action appears quite equal to that of the pure crystallised Emetine Hydrochloride. Of the 30 cases four have died: in three a complication was the immediate cause of death, the amœbic ulceration showing at the post-mortem evident signs of healing: the fourth died within 48 hours of admission.

On the publication of Dr. DENT'S method then it may be hoped that a cheap efficient and simple mode of treatment of amœbic dysentery will be available and may be recommended to physicians in charge of rubber estates, plantations, etc., where business principles forbid the use of the pure salt at its present inflated price.

Relapses.—With both Ipecacuanha Root and Emetine relapses are frequent occurring as a rule within a fortnight to a month after stopping the drug. These have responded favourably to a repetition of the treatment. I consider it important to continue the administration of ipecacuanha for at least a month where possible preferably in the form of Dover's powder.

Bacillary Dysentery.—The bacillary variety is treated in this hospital by the routine method of frequent doses of Salines but during the latter part of the year Anti-dysenteric serum has been employed in 12 cases with fairly good results. In 4 early cases with a history of under 1 week the injection, of 25 c.c. of this intravenously acted like a charm, all the symptoms disappearing and the stools becoming fæcal within 48 hours. The remaining cases had a history of 10–14 days before admission and were extremely ill. Four of them died within 5 days, the post-mortem showing a complete destruction of the mucosa of the colon and recovery hence practically impossible. In one case 75 c.c. were injected intravenously during the two days after admission: the patient improved

slightly but died apparently from a sapræmic condition, parts of the colon being quite gangrenous. The other 4 clinically almost equally severe were discharged within three weeks with traces of mucus in the formed dejecta. The Sera employed were obtained from Burroughs Wellcome & Co., Allen & Hanbury & Co., and from the Japanese Government Institute for research in Tropical diseases. Their trial is being continued but their value is hardly to be doubted: unfortunately the severe cases in which they might be expected to save life usually enter hospital too late.

Chronic Ulceration.—A certain number of cases come in and out of hospital for months, their dysenteric symptoms remaining uninfluenced by drugs and their general condition increasing in feebleness till they die with Oedema and heart failure. Post-mortem these show large chronic ulcers with sloughing base and a general atrophic condition of the mucosa. The ulceration is most probably due to septic organisms only and the only remedial measure which seems likely to be effective in these is Appendicostomy with subsequent colon lavage. Unfortunately in many of these the mental condition is so apathetic that they refuse operation: in many the physical condition is so low as hardly to warrant it. Further the subsequent attention necessary demands a larger staff than is at present available. In 3 cases of the kind this operation was performed by Dr. McVAIL. Two died after showing a temporary improvement: the 3rd recovered after 4 weeks of daily irrigation and was discharged in good condition.

Notes on the causal Agents.—I have not been able to make specific distinctions with any certainty in the amœbæ found in the dysenteric cases. The amœba coli is rare in my experience: I have only seen it twice in a dysenteric patient. Small differences exist in the size and structure of the amœbæ usually found but they can all be grouped as of the "pathogenic" type with definite ectoplasm, rather poorly staining eccentric nucleus and very active motility. Cysts with four nuclei are common and in conjunction with the rather large size of the nucleus in the vegetative form lead one to consider that the *Entamœba tetragena* (Viereck) is responsible for quite a large proportion of the cases.

In the bacillary form cultures have been made from the gut post-mortem in 24 cases. A scraping was taken of the congested mucosa and rubbed up in bouillon from which loopfuls were spread on Lactose Bile-salt agar plates. Blue colonies were further investigated by growth in media containing the following sugars, glucose, lactose, maltose, mannite, saccharose, raffinose, and adonite, and by agglutination with specific sera. In nine cases bacilli corresponding in every respect with *B. Flexner* were isolated, in three cases typical *B. Shiga*, in one case a bacillus giving the sugar reactions of *Bacillus Y*. In 8 cases no blue colonies developed but all fermented lactose and in the remaining five cases unidentified non-lactose fermenters were present.

Rarer forms of Dysentery.—Two forms of protozoal dysentery are described in the literature due respectively to spirochætes and to a species of *Trichomonas* resembling the *Trichomonas hominis* (Davaine).

Spirochætal dysentery in my experience is not a real clinical entity: spirochætes are frequently found in the dejecta especially in the more chronic forms of dysentery: they are also common in the later stages of cholera. But there are no characteristic symptoms and no characteristic lesion exists: in one very well-marked case where spirochætes were present in the intestinal mucus in enormous numbers the ulcers were typically amœbic: abundant amœbæ were seen in the submucosa apparently without any association of spirochætes in this situation.

The trichomonas however I consider responsible for a certain type of peculiarly obstinate dysentery characterised by its resistance to Ipecacuanha or Emetine, by a peculiar periodicity in the symptoms mucus disappearing from the motions for several days to reappear suddenly in large masses, and by the presence in these masses of the *Trichomonas* often in extraordinary numbers. Post-mortems have been performed in five cases of this kind: the lesions resembled those of an extremely chronic amœbic dysentery, the ulcers being numerous shallow with little undermining and no congestion. In 3 cases amœbæ of the pathogenic type were present at first but disappeared after treatment. In the others no amœbæ were ever detected. Of the seven cases which I have seen not one has recovered and no treatment seems to produce a permanent effect. I hope to publish later details of the morphology of this parasite and of the lesions associated.

TAN TOCK SENG HOSPITAL.

Table showing the districts from whence Malaria cases came and their length of residence in Singapore prior to admission.

	FEDERATED MALAY STATES.												DUTCH.		STRAITS SETTLEMENTS.								
	Johore.	Johore.	Dutch.	Johore.	India.	China.	Malacca.	Penang.	Pulo Ubin.	Pulo Tekong.	Pulo Bulang.	Klang.	Perak.	Seremban.	Kuala Lumpur.	Kuantan.	Kelantan.	Tringgannu.	Patani.	Burmah.			
		Panchor.	Pulo Malintang.	T. Surat.																			
Within three days ...	80	3	...	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" one week ...	60	3	4	2	7	4	7	2	28	6	12	4	1	5	2	...	1	...	1	...			
" two weeks ...	57	2	...	...	9	8	5	2	3	...	3	1	1	4	...	2	2	1	...	...	
" one month ...	38	3	1	1	13	17	1	2	1	4	2	2	...	1	...	1	2	...	...	...
" two to three months ...	12	...	2	...	36	47	1	2	2	...	2	...	...	...	...	1	4	...	...	...
" four to six months ...	3	...	...	...	46	53	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	250	11	7	15	111	129	14	8	34	10	19	7	2	10	3	6	10	2	1	1			

APPENDIX 1—Continued.

TAN TOCK SENG HOSPITAL—Continued.

Table showing the districts from whence Malaria cases came and their length of residence in Singapore prior to admission.

	STRAITS SETTLEMENTS.		DUTCH.	STRAITS SETTLEMENTS.		DUTCH.			BORNEO.	DUTCH.		Ceylon.	DUTCH.		Rhio.	Kudat.	FEDERATED MALAY STATES.	Siam.	BRITISH.		
	Blakang Mati.	Karimon Islands.	Pulo Sambu.	Pulo Bukum.	Bencoolen.	Deli.	Pontianak.	Batik Papan.	Java.										Zanzibar.	Sandakan.	Sarawak.
Within three days	5	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
" one week	...	13	6	1	...	1	...	2	...	...	7	...	1	...	...	...	1	...	...	...	182
" two weeks	...	3	2	1	...	...	1	...	...	...	1	...	...	...	...	...	...	1	...	...	110
" one month	...	...	3	...	...	...	...	...	1	...	4	1	...	...	...	...	...	...	1	...	101
" two to three months	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	112
" four to six months	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	102
Total	5	19	11	2	1	1	1	2	1	1	12	1	...	...	...	1	1	1	1	2	713

APPENDIX II.

TAN TOCK SENG HOSPITAL.

Table showing the results of microscopic examination of smears from 119 cases of Chronic ulcers:—

Vincent's organisms only	...	...	...	...	32
„ Fusiform bacillus only	...	...	...	...	14
„ Spirochæte only	...	...	...	...	1
„ Organisms and Diplococci	...	...	...	...	2
„ „ „ Cocci	...	...	...	...	1
„ „ „ Leptothrix (thin)	...	...	...	...	1
„ „ „ Streptococci	...	...	...	...	1
„ Fusiform organism and Cocci 1 ;	...	...	...	}	3
Diplococci 1 ; and Leptotrix thin 1.	...	...	...
Vibrio only 2 ; V + Diplococci 1 ; and Cocci 1.	...	...	...	...	4
Bacillus	...	...	...	...	10
„ and Cocci	...	...	...	...	8
„ „ Streptococci	...	...	...	...	3
„ „ Diplococci	...	...	...	...	3
„ „ Staphylococci	...	...	...	}	1
Streptococci and Diplococci	...	...	...
Staphylococci	...	...	...	...	1
Diplococci	...	...	...	...	1
Cocci	...	...	...	...	1
Leptothrix (9 thin and 2 thick) and Cocci	...	...	...	...	11
Nil seen	...	...	...	...	21
Total					119

APPENDIX III.

TAN TOCK SENG HOSPITAL.

Operations performed during 1912:—

Operations.	Total.	Cured.	Relieved.	Not improved.	Died.
Amputations	26	18	...	...	8
Appendicitis	3	3	...	...	...
Cholecystostomy	1	...	1	...	...
Appendicostomy	3	1	...	...	2
Laparotomy and Exploration of Gall bladder	1	1	...	...	...
Laparotomy and drainage of Supphrenic Abscess due to ruptured gastric ulcer	1	1	...	...	...
Gastro jejunosomy for Gastric Cancer	1	...	1	...	...
„ „ Ulcer	2	2	...	...	...
Omentoplexy	4	1	...	3	...
Liver Abscess	3	2	...	...	1
Laparotomy (Exploratory)	4	...	...	4	...
Splenectomy	2	...	...	...	2

APPENDIX III.—*Continued.*TAN TOCK SENG HOSPITAL.—*Continued.*

Operations performed during 1912:—

Operations.	Total.	Cured.	Relieved.	Not improved.	Died.
Laparotomy for Typhoid Perforation ...	2	...	...	...	2
Resection of bowel ...	2	1	...	...	1
Hæmorrhoids—					
Whitehead operation ...	2	2	...	...	...
Ligature ...	4	4	...	...	...
Excision of Testicle ...	7	7	...	...	...
Hydrocele (Radical cure) ...	13	13	...	...	...
Urethrotomy ...	2	2	...	...	...
Mastoidectomy ...	2	2	...	...	...
Trephining skull for Hamorrhage (Intraneal) ...	1	...	...	...	1
Empyema (Thorax) ...	6	6	...	...	...
Hæmathorax ...	1	...	...	...	1
Psoas Abscess ...	7	4	...	...	3
Excision of Tumours ...	3	2	1	...	...
Excision of Joints ...	3	3	...	...	...
Enucleation of Eyeball					
for Panophthalmitis ...	2	2	...	...	...
,, Orbital Tumour ...	2	...	2	...	...
Inguinal Hernia—					
Reduceable Radical cure ...	18	18	...	...	...
Strangulated ...	1	1	...	...	...
Strangulated c. Peritonitis (General) ...	5	...	...	...	5
Entropion ...	3	3	...	...	...
Other operations—					
Abscess ...	121	...	...	...	...
Enucleation of glands ...	249	...	...	...	...
Curettage ...	108	...	...	...	...
Skin grafting ...	10	...	...	...	...
Suturing wounds ...	59	...	...	...	...
Sequestrotomy ...	6	...	...	...	...
Dental ...	3	...	...	...	...
Tracheotomy ...	3	...	...	...	...
Paracentesis Pleura ...	4	...	...	...	...
Circumcisions ...	215	...	...	...	...
Neo Salvarsan Injections ...	24	...	...	...	...

Leper Asylum.

I. *Male Camp.*—

Remained 31st December, 1911 ...	...	7
Admitted ...	...	51
		—
Total ...	...	58
		—
Transferred to Pulau Jerejak ...	...	29
Absconded ...	...	6
Died ...	...	5
Remaining 31st December, 1912	...	18

2. *Female Camp.*--

Remained 31st December, 1911	...	...	26
Admitted	...	...	9
			—
	Total	...	35
			—
Absconded	...	...	Nil
Died	...	...	3
Remaining 31st December, 1912	...	...	32

Quarantine Camp, Singapore.

Of infectious diseases there were seven cases remaining at the end of 1911, viz.:—
5 Small-pox, 1 Plague and 1 Observation.

2. Admitted during the year	...	...	206
			—
	Total	...	213
			—
Discharged	...	...	113
Died	...	...	98
Absconded	...	...	1
Remained 31st December, 1912	...	...	1

3. Daily average number of patients in hospital was 4·98.

4. The death-rate was 48·22.

5. *Cholera.*—Fifty-five cases were admitted during the year. There were 46 deaths showing a death-rate of 83·64 per cent. RODGERS' treatment (intravenous hypertonic saline injection) was used in every case. The majority were injected several times. It is unfortunate that almost half of our cases were due to the June and July outbreaks in Tan Tock Seng's Hospital being practically all from the dysentery and phthisis wards, satisfactory results were hardly to be expected. Three of the Tan Tock Seng patients who recovered from their cholera, died of their original disease, but the deaths are given under cholera. Among the other cases three recovered from cholera and died, one from dysentery, one from phthisis and one from pneumonia; again the deaths are shown under cholera.

6. *Plague.*—There were 16 admissions, one remained at the beginning of the year, making a total of 17 cases in all. Of these 12 died, giving a death percentage of 70·5.

Free incisions in bubonic cases favourably influenced the course of the disease.

7. *Small-pox.*—The number of cases treated were 53. Nineteen died during the year, 17 of whom bore no marks of vaccination. The death-rate was 30·84 per cent.

The following table indicates the value of vaccination:—

<i>Vaccination marks.</i>	<i>No. of cases.</i>	<i>Deaths.</i>	<i>Mortality.</i>
—	—	—	—
None.	17	17	100 per cent.
1	2	2	100 per cent.
2	10	...	...
3	24	...	...

Lunatic Asylum.

REPORT BY DR. H. J. GIBBS, *Medical Superintendent.*

There remained on 31st December, 1911, 299 males and 65 females; 205 males and 33 females were admitted in 1912, making a total treated for the year of 504 males and 98 females.

Of the above 13 males and 3 females were second admissions.

Of the total treated in 1912, 75 males and 17 females were discharged recovered, 8 males and 1 female relieved, 1 female not improved; 6 males absconded and 58 males and 6 females died.

There remained in the Asylum on 31st December, 1912, 357 males and 73 females, a total of 430 patients.

The average daily number resident was 393 consisting of 326 males and 67 females.

The maximum and minimum daily numbers were 434 and 360 respectively.

Of the 430 patients remaining on 31st December, 1912:—

Males. Females.

—	—				
210	41	...	...	came from	Singapore.
98	16	...	...	„	„ Penang.
18	5	...	...	„	„ Province Wellesley.
18	6	...	...	„	„ Malacca.
2	—	...	...	„	„ Seremban.
2	1	...	...	„	„ Johore.
1	—	...	...	„	„ Christmas Island.
3	2	...	...	„	„ Pahang.
2	—	...	...	„	„ Kelantan.
1	1	...	...	„	„ British North Borneo.
2	1	...	...	„	„ Labuan.

The nationalities of those remaining were:—

Males. Females.

	—	—
British	...	4
Austrian	...	1
Dutch	...	0
Eurasian	...	8
Jew	...	1
Japanese	...	0
Tamil	...	22
Malay	...	23
Javanese	...	11
Bugis	...	1
Bombay	...	1
Bengali	...	3
Arab	...	1
Singalese	...	1
Mexican	...	1

Chinese:—

Hokkien	...	108
Teochew	...	46
Cantonese	...	39
Kheh	...	34
Hylam	...	31
Kow Chew	...	3
Lui Chew	...	5
Hok Chia	...	2
Tribe not known	...	11

Admissions.—Of the 238 admissions:—

Males. Females.

—	—					
120	21	...	...	...	came from	Singapore.
59	7	...	...	...	„ „	Penang.
15	2	...	...	...	„ „	Province Wellesley.
7	2	...	...	...	„ „	Malacca.
1	—	...	...	...	„ „	Sandakan.
1	—	...	...	...	„ „	Labuan.
1	—	...	...	...	„ „	Perak.
1	—	...	...	...	„ „	Christmas Island.
—	1	...	...	...	„ „	Kelantan.

The number of male admissions was, with the exception of the year 1904, the highest on record.

Amongst the admissions were 10 male and 3 female Europeans.

The physical condition of the admissions on admission are shown as:—greatly impaired, 40 males and 10 females; impaired, 51 males and 9 females; fair, 68 males and 6 females; and good, 46 males and 8 females.

As to the causes assigned malaria, phthisis, heart disease, including cardio-vascular changes, previous attacks, venereal disease and alcoholic intemperance have been prolific.

Malaria, credited as being the cause of the mental breakdown in 43 males and 2 females, shows fewer admissions than that for 1911 when 61 males and 1 female were admitted.

Alcoholic intemperance is slightly higher than that for 1911 being 19.

Cardio-vascular changes account for 43 admissions.

Discharges.—The recovery rate, based on the admissions for the year was 36.58 per cent for the males and 51.51 per cent for the females; 38.69 per cent on the total admissions.

Fifty-three of the 238 admitted in 1912 are shown as having recovered during the year, giving a percentage of 22.27.

A male Chinese patient who had been in residence from 23rd September, 1901, and who was looked upon as a chronic dement for some years recovered and was discharged on 2nd May, 1912.

Deaths.—The death-rate, based on the average daily number resident, was 16.31, and 10.63 on the total treated: the lowest on record.

It was especially low amongst the females being 8.75 on the average daily number, and 6.12 on total treated.

For the males the rate on the average daily number was 17.14 and 11.11 on total treated.

Causes of Death.—Dysentery and tuberculosis have, as usual, taken heavy toll. Twenty-two died from the former and 13 from the latter complaints. These two diseases contributed more than half the deaths. Cholera accounted for 2 and acute delirious mania for 4 of the deaths.

Cholera.—Three cases of which two proved fatal, occurred in August amongst the male inmates at Pasir Panjang. A detailed report of the occurrence was submitted.

The contacts numbering 73 with one of the sufferers and attendants were removed to the Quarantine Station on St. John's Island on the 18th July and remained there until the 1st September.

With their removal the outbreak ceased.

I am unable to assign a cause for the occurrence of these cases of cholera other than that, at the time cholera existed in Singapore.

The first case had been in residence for a year.

The beri-beri patients occupying adjacent wards and the female insane remained immune.

Dysentery.—During the latter portion of 1912 and in the very wet monsoon then experienced dysentery was both rife and fatal; many of the cases were of the acute bacillary type.

Three of these cases were treated with anti-dysenteric serum and, although Dr. SCOTT failed to find Shiga's bacillus, they made rapid recoveries.

Beri-beri.—One of the male cases of chronic dementia at Pasir Panjang developed acute beri-beri in June and died in a few days. He had for a long period been on a parboiled rice dietary.

Malaria has not been the scourge amongst the staff it was the previous year.

Whereas, in 1911, the matron, all the ayahs, most of the male attendants, the clerk, dressers, steward and members of his and my family were attacked; in 1912 two or three of the attendants and the steward alone suffered.

The drainage of the gully at the foot of the hill on which Dr. KEITH'S house stands and of the swamp at the back of the Asylum, together with the filling in of the swamp in Kampong Bahru, have helped in the reduction of malaria.

Criminals.—There remained on the 31st December, 1912, 16 criminal lunatics and 11 lunatic criminals. There were admitted in 1912, 9 criminal lunatics and 6 lunatic criminals, making a total treated of 25 criminal lunatics and 17 lunatic criminals. Of these 3 died, 5 recovered; the sentences of 4 expired and there remained 9 lunatic criminals and 21 criminal lunatics.

Suicide.—I regret to have to report, for the first time in three years, a case of suicide by hanging. The incident is all the more regrettable inasmuch as it was entirely due to the negligence of the attendant in charge and could have been prevented. The attendant was found asleep, on duty.

Casualties.—The majority of these were of a trifling nature. There were two cases of fractured ribs caused by conflict with other patients and a fractured base of skull from an accidental fall. The number of casualties is however, high, and, this is due to the crowded condition of the Asylum where, owing to want of accommodation and space, it is impossible to segregate a sufficient number of the troublesome cases.

No new buildings have been added as the construction of a new Asylum is in contemplation.

The Asylum has been very crowded on the male side and something must be done soon to relieve the congestion. The overcrowding seriously interferes with the convalescence of the acute cases and tends to render the Asylum insanitary. Further, it leads to assaults by patients on one another and necessitates seclusion oftener than is desirable.

The number of male attendants had to be increased by eight. Five were needed at Sepoy Lines to meet the increased number of patients; and three, to take charge of the insane patients under observation at the Tan Tock Seng's Hospital.

Industries.—During the year 6,336 yards of check cotton cloth were woven, from which were made 32 jackets and 42 pairs of trousers for Europeans, 1,272 bajus and 1,305 pairs of trousers for native males, 284 bajus and 244 sarongs for the native females, 12 mattress covers, 36 dusters, 48 pillow cases, 8 kimonos and 6 night dressers.

From sail canvas purchased 48 strong rugs and 4 combination suits were made.

From canvas supplied by the Selangor Medical Department 12 combination suits of assorted sizes were made and forwarded to Kuala Lumpur.

The revenue derived from paying patients amounted to \$6,625.44 which is \$1,354.29 in excess of the revenue for 1911.

The sale of old stores produced \$31.70.

The cost of drugs and dressings supplied to the Asylum in 1912 amounted to 58 cents per head per annum on the total treated.

The total cost per head per annum was \$ 112.11 on the average daily number.

Staff.—Mr. BATEMAN, Mrs. GUNN and LIM PANG KIAH remained as Assistant Surgeon, Matron and Steward, respectively, throughout the year.

European Attendant NIALI was absent on leave throughout the year.

My thanks are due to them and to Messrs. JOHNSON and KERR, European Attendants, for their ready co-operation in the work of the Asylum.

TABLE I.

LUNATIC ASYLUM.

Table showing the Admissions, Discharges and Deaths during the Year 1912.

—	Male.	Female.	Total.	Male.	Female.	Total.
In the Asylum on 1st January, 1912	...	...	...	299	65	364
Cases admitted :—						
First Admissions	...	...	...	192	30	222
Not First Admissions	...	...	...	13	3	16
Total cases under care during the year	...	...	...	504	98	602
Cases Discharged :—						
Recovered	75	17	92	...	...	...
Relieved	8	1	9	...	...	...
Not Relieved	...	1	1	...	...	...
Absconded	6	...	6	...	...	...
Died	58	6	64	...	...	...
Total cases discharged and died during the year	...	...	...	147	25	172
Remaining in the Asylum on 31st December, 1911	...	...	...	357	73	430
Average daily number resident during the year	...	...	...	326	67	393

TABLE II.
LUNATIC ASYLUM.

Table showing the Admissions, Re-admissions, Discharges and Deaths from 31st December, 1888, to 31st December, 1912.

—	Male.	Female.	Total.	Male.	Female.	Total.
Remaining on 31st December, 1888	...	...	...	176	32	208
Persons admitted during the period	...	...	...	3,806	653	4,459
Re-admissions	...	...	...	397	80	477
Total cases treated	...	...	...	4,379	765	5,144
Discharged Cases :—						40
Recovered	1,744	244	1,988	...	...	...
Relieved	406	104	510	...	...	...
Not improved	117	47	164	...	...	...
Absconded	132	22	154	...	...	...
Died	1,623	275	1,898	...	...	...
Total cases discharged and died since 31st December, 1888	...	...	...	4,022	692	4,714
Remaining in the Asylum on 31st December, 1912	...	...	...	357	73	430

TABLE III.

LUNATIC ASYLUM.

Table showing the Admissions, Discharges and Deaths, with the Mean Annual Mortality and Proportion of Recoveries per cent on the Admissions for the Year 1886 to 1912 inclusive.

YEAR.	Admitted.			Discharged.						Absconded.			Died.			Remaining on 31st December of each Year.			Average Number Resident.			Percentage of Recoveries on Admissions.			Percentage of Deaths on the Average Number Resident.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
	Male.	Female.	Total.	Recovered.			Relieved.			Not Improved.			Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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1886	164</

TABLE IV.

LUNATIC ASYLUM.

Table showing the History of the Annual Admissions since 1889, with the Discharges and Deaths, and the Numbers of each Year Remaining on 31st December of the Year reported on.

YEAR.	Admitted.						Of each Year's Admissions, Discharged and Died in 1912.												Total Discharged and Died of each Year's Admissions to 31st December, 1912.						Remaining of each Year's Admissions, 31st December, 1912.		
	New Cases.			Re-admissions.			Recovered.			Relieved.			Not Improved.			Absconded.			Died.			Total.			Male.	Female.	Total.
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
Prior to 1889	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1889	197	26	223	27	4	31	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1890	137	25	162	25	5	30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1891	144	26	170	14	3	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1892	170	27	197	14	3	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1893	157	24	181	12	5	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1894	156	30	186	17	4	21	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1895	186	21	207	16	7	23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1896	98	21	119	24	5	29	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1897	129	21	150	8	3	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1898	118	30	148	12	2	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1899	143	29	172	14	1	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1900	137	21	158	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1901	129	14	143	14	2	16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1902	176	27	203	15	3	18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1903	201	24	225	22	7	29	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1904	177	26	203	23	2	25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1905	176	30	206	23	2	25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1906	148	29	177	15	5	20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1907	167	34	201	8	3	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1908	154	43	197	20	3	23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1909	159	40	199	23	6	29	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1910	177	29	206	13	1	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1911	192	30	222	13	3	16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1912	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

TABLE V.—Continued.
LUNATIC ASYLUM.
Showing the Causes of Deaths during the Year 1912, together with the Ages at Deaths.

CAUSES OF DEATH.	Under 15 years.		15 and under 20 years.		20 and under 25 years.		25 and under 30 years.		30 and under 35 years.		35 and under 40 years.		40 and under 45 years.		45 and under 50 years.		50 and under 55 years.		55 and under 60 years.		60 and under 65 years.		65 and under 70 years.		70 and under 75 years.		75 and under 80 years.		Total		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
<i>Brought forward</i>	1	...	2	...	5	2	7	5	1	6	17	...	4	...	5	...	1	...	...	...	...	...	2	...	1	...	...	...
DISEASES OF THE CIRCULATORY SYSTEM.—																															
Aneurism of abdominal Aorta	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
DISEASES OF THE DIGESTIVE SYSTEM.—																															
Enteritis	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Cirrhosis of Liver	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
DISEASES OF THE URINARY SYSTEM.—																															
Chronic Interstitial Nephritis	
INJURIES.—																															
Fract. base of skull	
Suicidal Hanging	
Total.	1	...	2	...	6	3	9	6	1	7	17	...	4	...	5	...	1	3	1	4	1	...	58	64

TABLE VI.

LUNATIC ASYLUM.

Table showing the Length of Residence of those Discharged, Recovered and of those who Died, during the Year 1912.

Length of Residence.				Recovered.			Died.		
				Male.	Female.	Total.	Male.	Female.	Total.
Under one month	...	...	...	4	3	7	8	2	10
From one to three months	...	...	...	22	2	24	11	1	12
„ three to six months	...	...	...	19	5	24	7	1	8
„ six to nine months	...	...	...	10	2	12	5	...	5
„ nine to twelve months	...	...	...	9	1	10	6	...	6
„ one to two years	...	...	...	10	3	13	7	...	7
„ two to three years	...	...	...	...	1	1	1	2	3
„ three to five years	...	...	...	...	...	...	7	...	7
„ five to seven years	...	...	...	...	...	...	2	...	2
„ seven to ten years	...	...	...	...	...	...	2	...	2
„ ten to fifteen years	...	...	...	1	...	1	2	...	2
„ fifteen to twenty-five years	...	...	...	...	...	...	...	...	...
TOTAL				75	17	92	58	6	64

TABLE X-a.
LUNATIC ASYLUM.

Table showing the Probable Causes, Apparent or Assigned, of the Disorders in the Admissions, Discharges and Deaths of the Year 1912.

CAUSES.	ADMISSIONS.											
	Number of Instances in which a Cause was Assigned.											
	Admissions :—Male 205. Female 33. Total 238.											
	As Predisposing Cause.			As Exciting Cause.			As Predisposing or Exciting Cause.*			Total. †		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
<i>Moral.</i>												
Domestic Troubles (including loss of relatives and friends)
Adverse Circumstances (including business anxieties and pecuniary difficulties)	3	4	7	...	...	...	3	4	7
Mental Anxiety and Worry and Overwork	2	...	2	...	...	...	2	...	2
Religious Excitement
Love Affairs (including seduction)
Fright and Nervous Shock
<i>Physical.</i>												
Intemperance in Drink	18	1	19	...	...	...	18	1	19
Venereal Disease	4	...	4	20	2	22	24	2	26
Self-abuse
Sunstroke	1	...	1	...	...	...	1	...	1
Accident or Injury	1	...	1	...	...	...	1	...	1
Pregnancy	1	1	...	...	...	...	1	1
Parturition and the Puerperal State	3	3	...	...	...	...	3	3
Uterine and Ovarian Disorders
Lactation
Puberty	2	...	2	...	...	...	2	...	2
Epilepsy	5	1	6	...	...	...	5	1	6
Privation and Starvation
Heart Disease	40	3	43	40	3	43
Phthisis	28	4	32	28	4	32
Malarial Fever	43	2	45	...	...	...	43	2	45
Typhoid Fever
Other Bodily Diseases or Disorders	12	1	13	...	...	...	12	1	13
Previous Attacks	17	8	25	...	...	...	...	...	...	17	8	25
Old Age	8	2	10	...	...	...	...	...	...	8	2	10
Morphia Habit
Hereditary Influences ascertained ...	7	2	9	...	...	...	...	...	...	7	2	9
Congenital Defect
Indian Hemp Smoking	1	...	1	...	...	...	1	...	1
Unknown	63	8	71

* Where these could not be distinguished. † Some of the admissions are credited with more than one cause ; therefore, the sum of the “ known ” and “ unknown ” exceeds that of the admissions.

TABLE X-b.

LUNATIC ASYLUM.

Table showing the Probable Causes, Apparent or Assigned, of the Disorders in the Admissions, Discharges and Deaths of the Year 1912.—Continued.

CAUSES.	DISCHARGES.											
	Number of Instances in which a Cause was Assigned.											
	Discharges :—Male 89. Female 19. Total 108.											
	As Predisposing Cause.			As Exciting Cause.			As Predisposing or Exciting Cause.*			Total. †		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
<i>Moral.</i>												
Domestic Troubles (including loss of relatives and friends)	2	2	...	...	...	...	2	2
Adverse Circumstances (including business anxieties and pecuniary difficulties)	3	...	3	...	...	...	3	...	3
Mental Anxiety and Worry and Overwork
Religious Excitement
Love Affairs (including seduction)
Fright and Nervous Shock
<i>Physical.</i>												
Intemperance in Drink	14	1	15	...	...	...	14	1	15
Venereal Disease	2	...	2	7	...	7	9	...	9
Self-abuse
Sunstroke
Accident or Injury
Pregnancy	2	2	...	...	...	...	2	2
Parturition and the Puerperal State	2	2	...	...	...	...	2	2
Uterine and Ovarian Disorders
Lactation
Puberty
Epilepsy
Privation and Starvation
Heart Disease	5	1	6	5	1	6
Phthisis	4	...	4	4	...	4
Malarial Fever	46	...	46	...	...	...	46	...	46
Typhoid Fever
Other Bodily Diseases or Disorders	4	2	6	...	...	...	4	2	6
Previous Attacks	12	4	16	...	...	...	...	...	12	4	16
Old Age	4	...	4	...	...	...	...	...	4	...	4
Morphia Habit
Hereditary Influences ascertained	5	1	6	...	...	...	...	...	5	1	6
Congenital Defect
Indian Hemp Smoking	1	...	1	...	...	...	1	...	1
Unknown	10	5	15

* Where these could not be distinguished. † Some of the discharges are credited with more than one cause; therefore, the sum of the "known" and "unknown" causes exceeds that of the discharges.

TABLE X-c.

LUNATIC ASYLUM.

Table showing the Probable Causes, Apparent or Assigned, of the Disorders in the Admissions, Discharges and Deaths of the Year 1912.—Continued.

CAUSES.	DEATHS.											
	Number of Instances in which a Cause was Assigned.											
	Deaths:—Male 58. Female 6. Total 64.											
	As Predisposing Cause.			As Exciting Cause.			As Predisposing or Exciting Cause. *			Total. †		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
<i>Moral.</i>												
Domestic Troubles (including loss of relatives and friends)
Adverse Circumstances (including business anxieties and pecuniary difficulties)	1	1	...	...	...	...	1	1
Mental Anxiety and Worry and Overwork
Religious Excitement
Love Affairs (including seduction)
Fright and Nervous Shock
<i>Physical.</i>												
Intemperance in Drink	2	2	...	...	...	...	2	2
Venereal Disease	10	3	13	10	3	13
Self-abuse
Sunstroke
Accident or Injury
Pregnancy
Parturition and the Puerperal State
Uterine and Ovarian Disorders
Lactation
Puberty
Epilepsy
Privation and Starvation
Heart Disease	8	...	8	8	...	8
Phthisis	10	...	10	...	...	...	4	1	5	14	1	15
Malarial Fever	6	...	6	...	...	...	6	...	6
Typhoid Fever
Other Bodily Diseases or Disorders	15	4	19	...	...	...	15	4	19
Previous Attacks	2	...	2	...	...	...	...	...	...	2	...	2
Old Age	6	1	7	...	...	...	...	...	...	6	1	7
Morphia Habit
Hereditary Influences	1	1	2	...	...	...	...	...	...	1	1	2
Congenital Defect
Indian Hemp Smoking
Unknown	9	...	9

* Where these could not be distinguished. † Some of the deaths are credited with more than one cause; therefore, the sum of the "known" and "unknown" causes exceeds that of the deaths.

TABLE XI.

LUNATIC ASYLUM.

Showing the Form of Mental Disorder on Admissions and Deaths of the Year 1912, and the Form of Mental Disorder of the Inmates on 31st December, 1912.

FORM OF MENTAL DISORDER.	Admissions.			Recoveries.			Deaths.			Remaining in Asylum.		
	Admissions.			Recoveries.			Deaths.			Remaining in Asylum.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
Congenital or Infantile Deficiency without Epilepsy	...	...	...	...	...	...	...	...	...	6	2	8
Epilepsy acquired	10	...	10	1	...	1	...	...	...	17	2	19
General Paralysis of Insane	1	...	1	...	...	...	...	...	...	1	...	1
Mania, Acute	127	22	149	50	11	61	38	4	42	130	22	152
Do. Acute Delirious	4	1	5	...	...	...	3	...	3	1	1	2
Do. Chronic	1	...	1	...	...	...	1	...	1	2	1	3
Do. Adolescent	1	...	1	...	...	...	...	...	...	1	...	1
Do. Recurrent	4	...	4	...	1	1	...	...	...	5	...	5
Do. A Potu	17	...	17	13	...	14	...	...	...	4	...	4
Do. Insanity of Pregnancy	...	1	1	...	...	...	...	...	...	...	...	...
Do. Puerperal	...	3	3	...	2	2	...	...	...	...	1	1
Do. Senile	2	1	3	1	...	1	2	...	2	1	1	2
Melancholia, Acute	23	3	26	6	1	7	8	...	8	23	3	26
Do. Chronic	2	...	2	...	...	...	...	...	...	8	...	8
Do. A Potu	1	...	1	1	...	1	...	...	...	...	...	...
Do. Senile	1	...	1	...	...	...	...	...	...	...	...	...
Delusional Insanity	...	...	...	...	...	...	...	...	...	...	...	...
Dementia, Primary	...	...	...	...	...	...	1	...	1	4	...	4
Do. Præcox	2	...	2	1	...	1	2	...	2	...	...	...
Do. Secondary	5	1	6	2	1	3	...	1	3	2	...	2
Do. Potu	...	1	1	...	...	...	2	...	2	145	36	181
Do. Senile	4	...	4	...	...	...	1	1	2	...	1	1
Do. Organic	...	...	...	...	...	...	...	...	...	3	1	4
Do. Organic	...	...	...	...	...	...	...	...	...	4	1	5
TOTAL	205	33	238	75	17	92	58	6	64	367	73	430

TABLE XII.
LUNATIC ASYLUM.
Showing Occupation of Admissions.

Occupation.	Male.	Female.	Total.	Occupation.	Male.	Female.	Total.
Architect ...	1	...	1	<i>Brought forward</i> ...	81	...	81
Asst., Drug shop ...	1	...	1	Hawker ...	1	...	1
„ Manager ...	1	...	1	House wife ...	...	14	14
„ Rubber Estate ...	1	...	1	Ice Cream Seller ...	1	...	1
Baker ...	1	...	1	Lawyer ...	1	...	1
Barber ...	1	...	1	Lion Tamer ...	1	...	1
Basket-maker ...	1	...	1	Mandore ...	1	...	1
Beggar ...	1	...	1	Mason's Assistant ...	1	...	1
Boarding Officer ...	1	...	1	Medical Student ...	1	...	1
Boatman ...	1	...	1	Mining Inspector ...	1	...	1
Boy ...	1	...	1	Painter ...	1	...	1
Cake seller ...	1	...	1	Peon ...	2	...	2
Cargo Boatman ...	1	...	1	Petty Trader ...	1	...	1
Carpenter ...	8	...	8	Plank Sawyer ...	1	...	1
Cigar seller ...	1	...	1	Planter, Betel ...	1	...	1
Clerk ...	6	...	6	„ Nut Meg ...	1	...	1
Clerk, Tally ...	1	...	1	„ Padi ...	4	...	4
Cloth Roller ...	1	...	1	„ Rubber ...	1	...	1
Coffee seller ...	1	...	1	„ Tapioca ...	1	...	1
Coffee shop attendant ...	1	...	1	„ Vegetable ...	1	...	1
Coffee shop keeper ...	1	...	1	Pork seller ...	2	...	2
Cook ...	4	...	4	Prostitute ...	...	2	2
Coolie ...	6	...	6	Postman ...	1	...	1
„ Luggage ...	1	...	1	Poultry Breeder ...	1	...	1
„ Rice Shop ...	1	...	1	'Rikisha Owner ...	1	...	1
„ 'Rikisha ...	7	...	7	Road Contractor ...	1	...	1
„ Road ...	1	...	1	Sailor ...	3	...	3
„ Rubber Estate ...	2	...	2	Sawyer ...	1	...	1
„ Shop ...	1	...	1	Scholar ...	1	...	1
„ Spirit Shop ...	1	...	1	School Teacher ...	...	1	1
„ Sugar ...	1	...	1	Servant ...	1	...	1
„ Tapioca ...	1	...	1	Shop-keeper ...	2	...	2
Day labourer ...	1	...	1	Stall-keeper ...	1	...	1
Domestic servant ...	1	...	1	Steward ...	2	...	2
Dresser ...	1	...	1	Store-keeper ...	2	...	2
Engineer ...	3	...	3	Student ...	1	...	1
Farmer ...	1	...	1	Surveyor ...	1	...	1
Fisherman ...	3	...	3	Tailor ...	2	...	2
Fish seller ...	1	...	1	Teacher ...	1	...	1
Fireman ...	4	...	4	Tukang ayer ...	1	...	1
Flower seller ...	1	...	1	Vegetable seller ...	1	...	1
Fruit seller ...	2	...	2	Watchman ...	1	...	1
Gardener ...	2	...	2	Water carrier ...	1	...	1
Goldsmith ...	1	...	1	Wireman ...	1	...	1
Grass cutter ...	1	...	1	Unknown ...	73	16	89
<i>Carried forward</i> ...	81	...	81	TOTAL ...	205	33	238

Beri-beri Hospital, Pasir Panjang.

REPORT BY DR. H. J. GIBBS, *Medical Officer-in-charge.*

There remained at the end of 1911, 97 patients.

Three hundred and twenty-eight were admitted in 1912 of which number 273 were for beri-beri.

The total treated for the year was 425.

Of the 328 admissions 102 were from the General Hospital; 182 from Tan Tock Seng's Hospital; and 44, mostly relapsed cases of beri-beri, applied at the hospital for admission.

The nationalities of the admissions with their respective number were:—Chinese 301, Malays 14, Japanese 7, Javanese 3, Tamils 2, and Siamese 1.

Of the admissions 26 were paying patients and they, with nine other paying patients who remained on the first of the year, contributed \$689.25 towards their maintenance in hospital.

The other 390 patients were treated free of charge. Of the total treated:—

37 were discharged as recovered.

173 „ „ relieved.

1 „ „ not improved.

69 absconded.

14 were transferred—General Hospital 11.

Tan Tock Seng 1.

Lunatic Asylum 2.

17 died.

One hundred and fourteen remained in hospital at the end of the year.

The average stay of those discharged, recovered, relieved, not improved, transferred, absconded and died were, respectively, 118, 114, 14, 64, 81 and 82 days.

The percentage of abscondments though considerably less than that for the previous year is still high, it was 16.23 of the total treated. Many of these were overflow General Hospital patients who resented their transfer to Pasir Panjang.

The great majority of patients refuse to stay in hospital until complete recovery occurs. As soon as they are able to shift for themselves they demand their discharge and if their discharge is not granted they abscond, hence the large number of patients shown as “relieved.”

Of the 17 deaths only 3 could be assigned to beri-beri.

The percentage of deaths from this disease to the total treated was .70 and on the number of cases of beri-beri treated, viz., 365, it was .82.

Other causes of death were Peritonitis 1, Broncho-pneumonia 1, Pneumonia 2, Dysentery 3, Tubercle 5, Disseminated Sclerosis 1 and Myelitis 1.

Owing to the crowded condition of the General Hospital between the 20th May and the 7th September, 1912, 80 of its overflow patients were accommodated at Pasir Panjang where one of the wards was set apart for this purpose.

Of these 80, 20 were cases of Malaria and 41 were of Beri-beri. The remaining 19 suffered from Dysentery, Secondary Syphilis, Phthisis, Bronchitis, Ulcer, etc.

Two of the inmates became insane and were transferred to the Lunatic Asylum.

One of the hospital coolies died of Pulmonary Tuberculosis.

The hospital remained free from infectious disease notwithstanding that three of the insane inmates of a neighbouring ward were attacked by cholera.

Two new store rooms were erected. They filled a much-felt want.

APPENDIX B.

Penang.REPORT BY DR. R. DANE, *Senior Medical Officer.**"Settlement" includes Penang, Province Wellesley and Dindings.*

1. The estimated mean population of the Settlement for 1912 was 282,176 (Penang Island 143,236, Province Wellesley 130,803, Dindings 8,137).

2. *Births.*—The births in the Settlement during 1912 were 8,457. This is an increase of 1,099 on 1911 (Penang Island 3,766, Province Wellesley 4,456, Dindings 235).

3. *Deaths.*—The number of deaths in the Settlement in 1912 was 8,927 (5,987 males, 2,939 females, 1 sex unknown) which shows a decrease of 1,304 on 1911.

4. The death-rate of Penang Island alone was 34.59, a decrease of 6.87 per mille on 1911.

Principal Causes of Deaths, Penang Island alone.

Causes of Deaths.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Phthisis ...	626	674	641	917	901	738	803	719
Malaria ...	661	677	526	820	712	754	953	932
Beri-beri ...	291	282	212	534	399	367	368	349
Fever not specified ...	608	500	453	444	432	418	455	336
Dysentery ...	222	394	289	314	280	289	333	244
Convulsions ...	445	343	382	280	313	410	255	238
Tetanus ...	...	44	52	137	46	7	107	13
Trismus Neonatorum ...	...	...	...	...	...	...	...	154
Diarrhoea ...	323	251	211	133	65	121	312	150
Enteritis ...	...	...	...	...	...	...	...	171

Under the heading Trismus Neonatorum are undoubtedly included many cases of convulsions and other diseases.

5. The accompanying chart shows the total number of deaths at all ages on Penang Island for each week for 1911 and 1912. The rainfall for each week for 1912 is also shown.

6. *General Diseases.*—The admissions to the various hospitals in the Settlement were 13,064, against 12,873 in 1911.

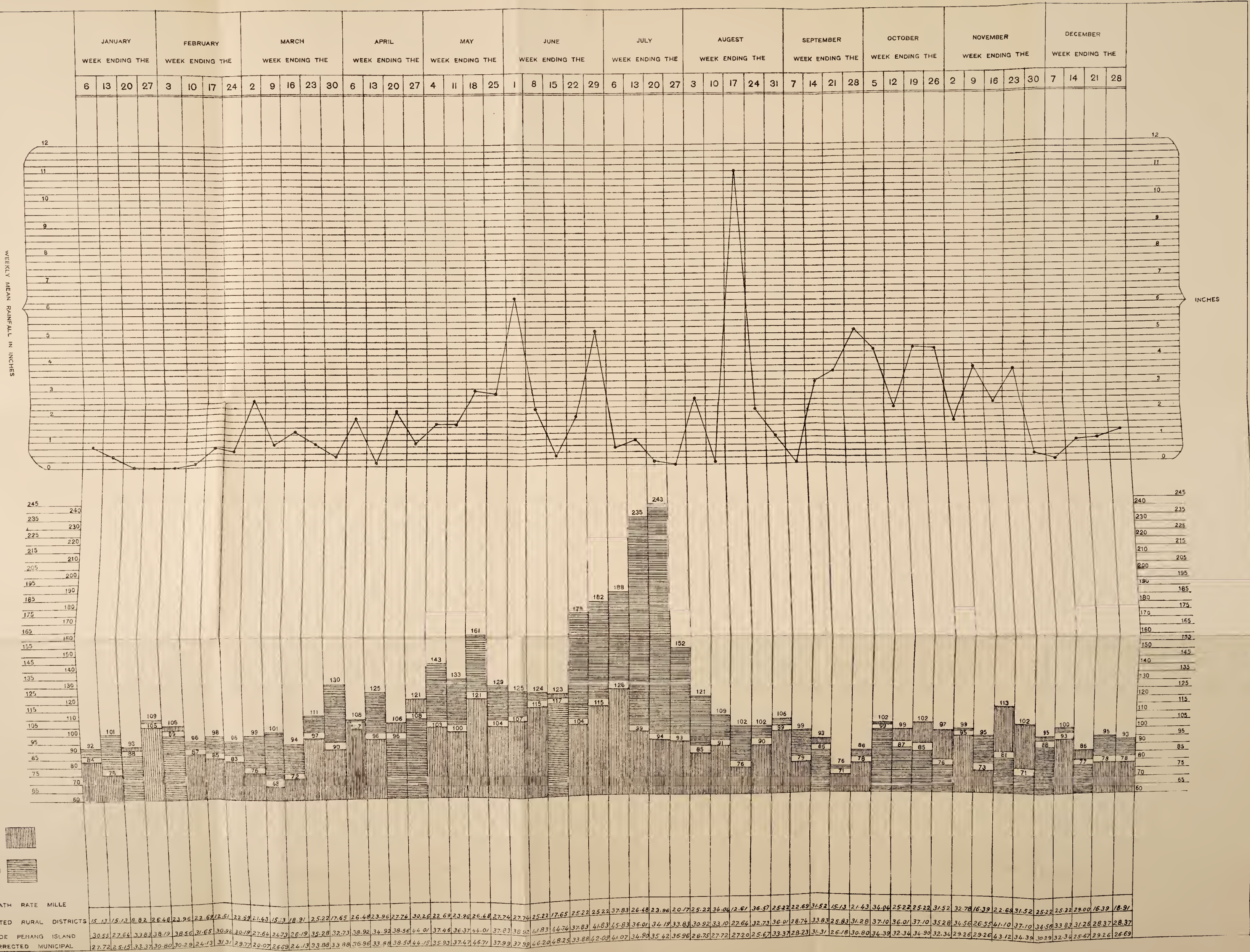
7. *Out-door Dispensaries.*—Total treated 1912—12,945, in 1911—13,249.

PENANG

DEATH RATE PER MILLE CALCULATED ON A MEAN ANNUAL POPULATION 143,236
RURAL POPULATION 41,069

1912

DEATH RATE WITHIN MUNICIPAL LIMITS
CALCULATED ON A POPULATION OF 102,167





8. The best method of comparing the health this year with last is by the following table as the diagnosis may be relied upon.

Return showing admissions and deaths in 1911 and in 1912 for some diseases in the Penang Hospitals.

	1911.		1912.	
	Cases.	Deaths.	Cases.	Deaths.
Phthisis	189	119	262	149
Typhoid	6	2	7	...
Diarrhœa	417	134	378	114
Dysentery	315	122	258	103
Ankylostomiasis	27	6	76	21
Syphilis (1)	452	9	399	8
Gonorrhœa (2)	130	...	153	...
Ulcers (3) of Generative organs ...	194	...	209	...
Tetanus	5	4	4	2
Small-pox	110	32	6	1
Cholera	76	67	...	...
Plague ... ..	...	...	...	...
Malaria	1,158	75	1,119	86

(1) Includes Primary, Secondary and Tertiary.

(2) „ Gonorrheal Urethritis, Gonorrheal Ophthalmia and Gonorrheal Rheumatism.

(3) Includes Chancres not specific, Chancroids and Soft Chancre.

9. *Phthisis*.—I am inclined to doubt Phthisis being more prevalent in 1912 than in 1911. For although the figures for 1912 are greater than those for 1911 yet the percentage of mortality is lower. This is, at least to some extent due to more frequent examination of sputa. So more mild lung complaints being recognized as really tubercular more cases would get returned as such thus accounting for the higher cases and the lower death-rate, 57 per cent for 1912 against 63 per cent for 1911.

10. *Beri-beri*.—Parboiled rice is exclusively used in all Government institutions and in them no fresh cases have occurred.

11. Pneumonia due to the *Pneumococcus* is on the increase.

12. *Typhoid* :—

(i) Seven cases with no deaths in the General Hospital.

(ii) Two severe cases were treated in the 1st Class Ward. For weeks both hovered at the point of death. One, after prolonged convalescence, left for England practically helpless and with his mind gravely affected.

(iii) *Widal's Test*.—No case is returned as typhoid unless a positive Widal is obtained. Widal's have been done for private practitioners when asked for.

13. *Diarrhœa*.—For this disease it is always difficult to compare one year with another. The causes of diarrhœa are many and quite commonly difficult to detect. One doctor would describe a case as diarrhœa regarding the concurrent dyspepsia as not necessarily the main antecedent; while another in the same case would regard the diarrhœa as but a symptom and return the case as chronic dyspepsia. A diarrhœa would by one man be described as diarrhœa because he would doubt the history of previous dysentery; another considering it better always to ascribe a likely cause than no cause at all would return such a case as chronic dysentery.

14. *Dysentery*.—The same remarks applied here as to diarrhœa. Both in the General and District Hospitals the variety met with is mostly amœbic.

15. *Ankylostomiasis*.—The figures do not necessarily indicate an increase in the prevalence of this disease. During 1912 every case of anæmia admitted to the General and District Hospitals was examined for ova which formerly had not been the case. In addition in 1912 a number of decrepit Indian coolies, amongst whom ankylostomiasis is common, applied to the Superintendent of Immigration for repatriation and many of these suffering from the disease were sent to hospital as unfit to travel.

16. *Venereal disease*:—

(i) The figures of Syphilis and Ulcers of the generative organ combined

761	1912	} show a decrease on those of 1911.
776	1911	

(ii) It is very desirable for scientific purposes that the latest laboratory tests for syphilis be systematically applied to all suspicious cases. But more accurate diagnosis will be of little use in preventing the spread of this disease until venereal disease is included in the Quarantine Ordinance under the definition of dangerous infectious disease.

(iii) Salvarsan is being used. With this treatment the signs of syphilis rapidly clear up, but it is impossible yet to foresee the permanent effects.

17. *Tetanus*.—Four cases were admitted into the Penang Hospitals and two died. Serum was not used as the cases did not come sufficiently early, *i.e.*, within 30 hours of the development of symptoms. The two cases admitted to the General Hospital got well on carbolic acid treatment. Recovery was slow and convalescence prolonged. One man after arrival had almost continuous spasm for four days. Two months later he walked out of hospital perfectly well.

18. *Zymotic Diseases*.—Small-pox, Cholera, Plague. But 6 cases of Small-pox and no case of Cholera or Plague were reported during the year in Penang.

19. *Malaria*:—

(i) Prevalence ... { 1911 ...1,158 with 75 deaths.
1912 ...1,119 with 86 deaths.

(ii) All cases of fever admitted to hospital during 1912 underwent a blood examination.

(iii) Outside the Municipality it is very difficult to estimate the amount of work done tending to diminish the prevalence of this disease. So many people outside of our profession know that mosquito-breeding places should be destroyed, that mosquito curtains should be used to prevent, and that quinine is the cure for malaria, that such work is done of which no record is kept. Nor can one on the other hand utilise the death returns as an index of increase or decrease; for outside the Municipal area a huge percentage of diagnosis is made by the peasants.

(iv) Improvements for general sanitary reasons including the draining or filling up of swamps were made at some villages.

(v) In Penang Rural district the following works were carried out in 1912:—

Tanjong Tokong village.—Concrete outlet drains connecting three culverts with the sea cost \$4,390.

Balik Pulau village.—Extension of brick drain to river cost \$2,998. These drains formerly ended blindly.

(vi) During 1912, outside the Municipal area, no spleen rate was taken. The observations I made at all boys' schools in 1911 are now attached.

(vii) Quinine was distributed, as asked for, to schools, police stations and gangs of Public Works Department coolies.

- (viii) While with a Health Officer, a mandor, and a gang of coolies much improvement would be effected, yet a practical stamping out of the disease cannot be looked for till the people are taught to help themselves.

20. *Infantile Mortality*:—

	1911.	1912.
Deaths under 3 months ...	490	543
Deaths between 3 months and 5 years ...	892	699

The total number of deaths under 5 years show a decrease for 1912 against that of 1911. The figures being 1,242 against 1,382.

Much good work is done by the Municipal visiting Nurse, Mrs. STRUGNELL, who visits all maternity cases in poorer quarters of the town and advises the friends not merely about the mother and the newly born child but about any other sickness, illfeeding, or insanitary condition she may see. The Maternity Hospital to be commenced in 1913 and to be paid for by the King EDWARD VII Memorial fund is to be provided with a children's ward and an out-patient's children's department. Boys and girls at all schools are being educated in elementary hygiene, and especially the cause of malaria.

21. The sanitary conditions of George Town are year by year being improved. Against all opposition engendered by ignorance and superstition the belief in Western Medical Science advances.

A leaflet in Chinese is posted up in various places in the rural districts advising sick people to come to hospital directly their illness begins. It seemed to me best to get this signed by well-known Chinese merchants.

With all these forces at work there can be no doubt that the infantile as well as the general mortality will steadily decrease.

Penang Island.

The result of examining boys in schools for large spleen in 1911.

No.	Vernacular schools.	Average attendance.	Total No. examined.	Of whom large spleens.
1	Aier Itam ...	38	49	4
2	Balik Pulau ...	56	52	0
3	Batu Feringgi ...	52	41	0
4	Batu Maund ..	29	38	7
5	Batu Uban ...	27	30	2
6	Bayam Lepas ...	82	84	8
7	Carnarvon Street ...	82	93	3
8	Chowrasta ...	172	169	6
9	Dato Kramat ...	56	71	6
10	Ginting ...	47	38	3
11	Glugor ...	49	46	14
12	Jelutong ...	77	71	18
13	Kampong Java ...	101	100	2
14	Kelawei ...	84	74	12
15	McAlister Road ...	49	48	4
16	Permatang Damar Laut ...	49	46	14
17	Pondoh Upeh ...	43	30	0
18	Pulau Betong ...	53	52	8
19	Relau ...	82	79	16
20	Sungai Batu ...	55	69	20
21	Sungai Korok ...	85	72	15
22	Sungai Nibong ...	40	44	3
23	Sungai Rusa ...	78	67	11
24	Tanjong Tokong ...	75	60	1
25	Telok Kumbar ...	72	68	2
26	Titi Tras ...	70	33	2
27	Telok Bahang ...	42	47	4

No.	Aided Boy's School.	Average attendance.	Total No. examined.	Of whom large spleens.
1	Free School	769	300	4
2	St. Xavier's Institution ...	1,176	200	8
3	Pulau Tikus School	106	94	3
4	Anglo-Chinese School	925	190	5
5	Roman Catholic Anglo-Tamil School	90	112	4
6	St. George's Anglo-Tamil School ...	64	59	1
7	American Mission Anglo-Tamil School	67	76	5

Quarantine Camp, Jelutong.

REPORT BY DR. R. DANE, *Senior Medical Officer.*

1. *Buildings.*—The roof of the special Eurasian Ward was re-attapped. The main gate was repaired.

2. *Work done.*—Of infectious disease there was remaining one case of chicken-pox at the beginning of the year making a total treated of forty.

3. Fifteen contacts and five observation cases were also admitted during the year, of these three were vaccinated for the first time on arrival in the camp, ten had good vaccination marks and two had obvious marks of previous small-pox.

4. There were no deaths during the year from any infectious disease. One death occurred amongst the patients who were admitted for observation due to acute peritonitis caused by perforation of a dysenteric ulcer.

5. *Staff.*—Dresser SUBAKRISHINEN was on duty from 1st January to 16th February, and Dresser PERKINS from 17th February to the end of the year.

TABLE I.

*Table showing Admissions, Discharges, etc., for the Year 1912
Classified by Nationality.*

Nationality.	Remained.	Admitted.	Total.	Discharged.	Transferred.	Absconded.	Died.	Remaining.
Europeans ... ..	...	1	1	1	...	...	...	...
Eurasians ... ..	...	5	5	5	...	...	...	...
Chinese ... ..	...	4	4	4	...	...	...	...
Malays ... ..	...	1	1	1	...	...	...	...
Islam Klings	1	2	3	3	...	...	...	...
Tamils ... ..	...	25	25	22	1	...	...	2
Bengalee Islam ... ..	...	1	1	1	...	...	...	...
Sikhs ... ..	...	...	...	...	...	...	...	...
Total	1	39	40	37	1	...	...	2

TABLE II.

Table showing monthly Admissions for various Infectious Diseases.

MONTHS.	Small-pox.	Chicken-pox.	Cholera.	Measles.	Mumps.	Observation and Contacts.
January ...	...	5	...	...	I	...
February ...	I	3	...	...	...	3
March ...	...	I	...	...	...	I
April ...	...	2	...	...	...	...
May ...	...	...	...	...	...	...
June ...	...	...	...	I	...	3
July ...	2	I	...	...	...	2
August ...	...	5	...	...	...	2
September ...	...	3	...	...	...	3
October ...	...	5	...	...	...	3
November ...	I	3	...	...	...	...
December ...	I	4	...	...	...	3
Total ...	5	32	...	I	I	20

TABLE III.

Table showing Admissions Classified for Nationality and Disease, for the Year 1912.

Nationality.	Small-pox.	Chicken-pox.	Cholera.	Measles.	Mumps.	Observation and Contacts.
Europeans ...	I	...	...	...	...	...
Eurasians ...	...	5	...	...	...	4
Chinese ...	I	2	...	I	...	3
Malays ...	...	I	...	...	...	2
Islam Klings ...	...	2	...	...	...	2
Tamils ...	3	2I	...	...	I	9
Bengalee Islam ...	...	I	...	...	...	...
Total ...	5	32	...	I	I	20

General Hospital.

REPORT BY DR. DANE, *Senior Medical Officer.*

Staff.—Physician, R. DANE, L.R.C.P., M.R.C.S. Surgeon, J. S. WEBSTER, M.B., Ch. B. Hon. Ophthalmic Surgeon, J. KIRK, M.D., C.M. Medical Officer, J. H. TENNENT, M.B., Ch. B.

1. During the year 1912 the total number of patients shows a slight decrease as compared with the figures for 1911. 271 patients have been treated in the European wards and 1,623 in the Native wards as in comparison with 283 and 1,630, respectively, in 1911.

2. The mortality, excluding all deaths within 24 hours of admission, was 12 for the European wards and 81 for the Native wards as compared with 8 for the Europeans and 129 for the natives during the year 1911.

3. The principal diseases treated were:—Malaria, Tuberculosis (including Phthisis,) Dysentery, Venereal Diseases, Beri-beri.

4. *Beri-beri.*—All the patients in the hospital were fed upon parboiled rice and no cases of this disease originated in the hospital. The number of admissions shows a decrease as compared with former years, the figures being 9 in 1912 and 15 in 1911.

5. *Operations.*—The number of operations has increased appreciably and many of a more serious nature have been successfully performed.

6. *Buildings.*—Towards the end of the year the corridor from the native ward to the new operation theatre was completed. The theatre is now in full working order, and it is a great improvement on the old one.

New latrines, lavatories, bath rooms were erected for the use of the patients in the 3rd class ward.

The laboratory has been transferred to a better room and is in full working order, so that bacteriological cultures, etc., can now be made in addition to the routine work of the hospital.

A therapeutic tube has been obtained from the X-ray apparatus for the treatment of certain skin diseases. One case of Lupus has already been treated with temporary benefit.

A Multostat arrived at the end of the year but could not be put into action before December 31st. It will be available for galvanisation, faradisation, cautery, light for clinical examination, and for vibratory massage.

7. *Staff.*—Again there have been numerous changes in the staff both amongst the Medical Officers and Nursing Staff.

Medical Staff.—On March 15th Dr. SHARP left the Government service. On April 20th Dr. SAYERS arrived and assumed the duties of Medical Officer being attached to the General Hospital.

On July 3rd Dr. TAYLOR relieved Dr. SAYERS.

On July 16th Dr. FITZGERALD arrived from home and relieved Dr. TAYLOR who took up his duties in the District Hospital.

On December 6th Dr. HALL TENNENT relieved Dr. FITZGERALD who went to Province Wellesley to relieve Dr. WHITTLE on his departure for home.

Nursing Staff.—Miss JOSE, Nurse Probationer, arrived from Singapore in March.

Miss SMITH was granted 8 months' leave and left for Europe on April 20th.

Miss TAIT arrived from Singapore on April 22nd.

Miss SINCLAIR arrived from England on June 10th and assumed the duties as sister.

Miss MCPHEE left for Singapore on July 18th.

Miss BARCLAY was appointed a Nurse Probationer arriving October 27th.

Miss MACARTHY resigned and left the Nursing Staff on November 5th.

Mrs. RUXTON resigned and left on November 15th.

Miss STEPHEN, Sister in the European Ward, was granted long leave and proceeded to Europe on December 19th.

Table showing the Admissions, Daily Average and Percentage of Deaths, in the General Hospital, Penang.

	Remained.	Admitted.	Total Treated.	Discharged.	Transferred.	Absconded.	Died.	Remaining.	Average daily sick.	Percentage of Deaths to total treated.	Died within 24 hours of Admission.	Percentage of deaths to total treated excluding those dying within 48 hours of Admission.
Europeans ...	10	261	271	233	5	4	17	12	10.63	6.27	5	4.51
Natives ...	40	1,175	1,215	953	71	45	104	37	43.24	8.55	24	} 5.06
Native Police ...	2	406	408	399	...	4	1	9	8.98	0.24	...	
Total ...	52	1,842	1,894	1,585	76	53	122	58	62.85	15.06	29	9.57

Prison Hospital, Penang.

REPORT BY DR. J. S. WEBSTER, *Medical Officer.*

1. The sanitary condition of the Prison was good and the health of the prisoners was satisfactory.

2. *Figures.*—Twenty-two patients were remaining in hospital at end of 1911, 687 were admitted during the year. The average daily sick was 21.10. The chief diseases treated in the hospital were Anæmia (42), Diarrhœa (148), Bronchitis (36), which is an increase in number of cases as compared with the former year.

3. *Mortality.*—Of the 24 deaths 8 contracted the disease in Prison, 16 arrived with the disease in them and were sent straight to hospital.

4. There was no case of beri-beri or enteric fever.

5. The prisoners breaking stone were in the latter part of the year provided with goggles to protect their eyes.

6. *Staff.*—Medical Officer in charge :—

January 1st to September 30th Dr. DANE.

October 1st to end of year Dr. WEBSTER.

Assistant Surgeon :—January 1st to October 1st Mr. LEICESTER.

Dresser :—

January 1st to August 31st Dresser HOSEY.

August 31st to September 30th Dresser MARTINEZ.

October 1st to end of year Dresser L. SHAIK.

Nationality Return of the Prison Hospital, for the Year 1912.

Nationality.	Remained at end of 1911.	Admitted.	Total.	Discharged.	Transferred.	Absconded.	Died.	Remaining at end of 1912.
Europeans ...	...	2	2	2	...	...	...	...
Eurasians ...	...	5	5	4	1	...	...	...
Chinese ...	15	402	417	383	4	...	17	13
Malays ...	1	70	71	68	...	...	3	...
Tamils ...	4	115	119	114	...	...	2	3
Tamil, Islam ...	1	58	59	59	...	...	...	...
Bengalee ...	1	8	9	6	1	...	2	...
Arab ...	...	1	1	1	...	...	...	...
Japanese ...	...	1	1	1	...	...	...	...
Javanese ...	...	13	13	13	...	...	...	...
Sikhs ...	...	12	12	12	...	...	...	...
Total ...	22	687	709	663	6	...	24	16

District Hospital, Penang.

REPORT BY DR. J. S. WEBSTER, *Medical Officer*.

Buildings.—Ward 6 has been fitted with wire for mosquito curtains. The hospital grounds have been recently improved.

Work done.—There were 363 patients in hospital at the end of 31st December, 1911.

Four thousand two hundred and forty-seven cases were admitted during the year including 25 Europeans, making total treated 4,610, the average daily sick during the year was 330.92 as compared with 331.13 in 1911.

There were 523 deaths during the year as compared with 516 deaths in the previous year. The percentage of deaths to total treated was 11.34 as compared with 13.30 in 1911.

Among the 523 deaths during the year, 37 died within 48 hours, the percentage of deaths to total treated excluding those dying within 48 hours was 10.62.

Beri-beri.—Ninety-four cases treated with 17 deaths the percentage of which is 18.08. This is a marked decrease in the number of cases there being 127 in 1911. No cases originated in hospital. Parboiled rice only is used.

Dysentery.—One hundred and fifty-three cases treated with 65 deaths, percentage 42.48.

Malaria Fever.—Seven hundred and forty-two cases treated with 57 deaths, percentage 7.68. As the diagnosis was verified in each case by examination of the blood these figures are of value.

Anæmia.—One hundred and thirty-one cases treated with 45 deaths, percentage 34.35. The most of these cases were due to Ankylostomiasis.

Phthisis.—Two hundred and two cases treated with 122 deaths, percentage 60.39. There is an increase in the number with a very high mortality. Either the sputum was found to contain T. B. or the disease was identified by post-mortem examination.

Diarrhœa.—One hundred and eighty-three cases treated with 84 deaths, percentage 45.90.

Venereal Diseases.—Six hundred and eighty-eight cases treated with 4 deaths, percentage 0.58. Salvarsan was used in the treatment of 20 cases of syphilis, 12 were in primary and 8 in the secondary stage, and all but 4 between the ages of 20 and 35, 4 were over 40. Cases in the primary stage, showed marked and rapid improvement, beginning in few days time and the initial sore quickly healed up; as soon as that had happened, the patients demanded their discharge and were lost sight of, which is rather an unsatisfactory termination. The result in the cases in the secondary stage were quite as good for rashes disappeared quickly. Ulcers cleared up and healed, but this process was slower. Only one case showed no improvement, there were no deaths.

The Salvarsan in 18 cases was injected intramuscularly and in 2 cases intravenously, no bad effects were noticed at the site of injection, and the patients displayed no constitutional effects, except in one case, when vomiting, which was quickly relieved, ensued.

Operations.—One hundred and twenty-five cases, Abscess 50, Circumcision 10, Bubo 65. These are all trivial, serious cases are transferred to the General Hospital for the operation, and kept there, whilst efficient and careful nursing is required.

Staff.—There have been several changes during the year.

Medical Officer.—I continued to be in charge during the year.

Assistant Surgeons.—Mr. A. C. BASU who was appointed on 6th April, 1912, and commenced work on that date was transferred to Malacca on the 23rd June, 1912.

Mr. P. METHA took up duty on 1st July, 1912, and was transferred to Balik Pulau on 6th July, 1912.

Mr. B. M. CHOWDBURY took up duty on 6th July, 1912.

TABLE A.

Table showing the Admissions and Deaths from the Principal Diseases in the District Hospital, Penang, for the past Four Years.

DISEASES.	1909.			1910.			1911.			1912.		
	No. of Cases Treated.	Died.	Percentage.	No. of Cases Treated.	Died.	Percentage.	No. of Cases Treated.	Died.	Percentage.	No. of Cases Treated.	Died.	Percentage.
Beri-beri	200	26	13'00	182	38	20'87	127	25	19'68	94	17	18'08
Dysentery	295	122	41'35	202	111	54'95	179	77	43'02	153	65	42'48
Malarial Fever	460	39	8'47	428	50	11'68	647	58	8'96	742	57	7'68
Anæmia	304	66	21'71	179	41	22'90	179	57	31'84	131	45	34'35
Phthisis	261	129	49'42	187	111	59'35	151	92	60'92	202	122	60'39
Diarrhœa	115	35	30'43	129	49	37'98	232	91	39'22	183	84	45'90
Veneral Diseases	582	15	2'57	620	3	0'48	613	6	0'97	688	4	0'58

TABLE B.

Return showing the Admissions and Deaths for Beri-beri cases, in the District Hospital, Penang, for the Year 1912.

NATIONALITY.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.
Chinese	8	4	5	6	4	...	16	1	6	...	7	1	2	1	5	1	4	1	2	...	8	...	8	1
Tamils	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	2	...	...	...
TOTAL	8	4	5	6	4	...	16	1	6	...	8	1	2	1	5	2	4	1	2	...	10	...	8	1
Rainfall	0.92		1.41		2.21		5.48		14.79		8.54		4.05		18.56		14.72		5.96		9.50		3.88	

TABLE C.

*Return of Venereal Diseases admitted into the District Hospital, Penang,
for the Year 1912.*

Diseases.	Total Cases treated.	Died.	Remarks.
Gonorrhœa ...	68	...	
Do. Ophthalmia ...	21	...	
Do. Arthritis ...	33	...	
Primary Syphilis ...	58	...	
Secondary Do. ...	293	...	
Tertiary Do. ...	23	4	
Bubo ...	69	...	
Soft chancre ...	123	...	
	688	4	

Nationality Return of the District Hospital, Penang, for the Year 1912.

Nationality.	Remained.	Admitted.	Total.	Discharged.	Transferred.	Absconded.	Died.	Remaining.
Europeans ...	1	24	25	22	...	2	...	1
Eurasians ...	1	28	29	24	...	...	3	2
Dutch ...	...	1	1	1	...	...	...	...
Chinese ...	234	2,715	2,949	2,205	54	41	363	286
Tamils ...	105	1,246	1,351	1,134	16	15	130	56
Malays ...	7	28	35	24	...	...	4	7
Islam Klings ...	13	164	177	145	1	1	19	11
Javanese ...	...	5	5	5	...	...	...	...
Jews ...	...	1	1	...	1	...	...	...
Bengalis ...	...	26	26	18	3	...	3	2
Singhalese ...	2	4	6	5	...	...	1	...
Japanese ...	...	4	4	4	...	...	...	...
Negro ...	...	1	1	1	...	...	...	...
Total ...	363	4,247	4,610	3,588	75	59	523	365

Eye Ward, District Hospital, Penang.

REPORT BY DR. J. S. WEBSTER, *Acting Ophthalmic Surgeon.*

1. It is satisfactory to note that more cases are being treated year by year in this ward and that the patients are quite willing to undergo any operative treatment that may be necessary.

2. In 1912, 211 patients were treated in the ward as compared with 140 in 1911, and the range of diseases treated was a wide one. Unfortunately many patients arrive for treatment with incurable disease. All that we can do is to give them a home in the old blind ward. If all cases of corneal ulceration could be persuaded to come into hospital early, before the eyes are hopelessly disorganized, much more good work would be done.

3. The number of operations is, if anything, on the increase. The number of those for cataract, where the results are often very satisfactory has certainly gone up.

4. Dr. KIRK went on leave in April last and since then the Medical Officer, District Hospital, has been in charge of the ward.

5. Dresser CARMAGAM has been in charge all the year.

Annual Return of Sick of the Ophthalmic Ward for 1912.

					<i>Cases.</i>
					—
Conjunctivitis	...	...	...	...	15
Gonorrhœal Ophthalmia	...	...	...	...	21
Trachoma	...	...	...	...	16
Pytergium	...	...	...	...	6
Keratitis	...	...	...	...	4
Opacity of Cornea	...	...	...	...	13
Ulcer Cornea	...	...	...	...	25
Leucoma	...	...	...	...	3
Adherent Leucoma	...	...	...	...	1
Iritis	...	...	...	...	16
Chronic Iritis	...	...	...	...	6
Iridocyclitis	...	...	...	...	2
Choroiditis	...	...	...	...	1
Glaucoma	...	...	...	...	1
Hypopyon	...	...	...	...	3
Optic Atrophy	...	...	...	...	5
Cataract	...	...	...	...	26
Panophthalmitis	...	...	...	...	4
Amaurosis	...	...	...	...	27
Fistula Lacrymal Sac	...	...	...	...	2
Entropion	...	...	...	...	6
Ectropion	...	...	...	...	2
Injury of Eye-ball	...	...	...	...	4
Injury of Eye-lid	...	...	...	...	2
				Total	211

Ophthalmic Ward.

Out-door Cases treated during 1912.

					<i>Cases.</i>
					—
Conjunctivitis	...	...	...	...	5
Gonorrhœal Ophthalmia		...	...	...	1
Keratitis	...	...	...	...	2
Opacity of Cornea	...	...	...	...	4
Ulcer Cornea	...	...	...	...	1
Cataract	...	...	...	...	1
Amblyopia	...	...	...	...	1
Wound of Cornea	...	...	...	...	5
Foreign body into the Cornea		...	...	...	2
Total					— 22 —

Operations performed in the Ophthalmic Ward during the year 1912.

					<i>Cases.</i>
					—
Pterygium	...	...	...	...	5
Iridectomy	...	...	...	...	4
Cataract	...	...	...	...	26
Removal Foreign body from Cornea			...	...	2
Lacrymal Abscess	...	...	...	...	2
Hypopyon (removal pus from anterior chamber)...				...	3
Enucleation Eye-ball	...	...	...	...	4
Total					— 46 —

Four Years' Record.

Cases Treated in the Ophthalmic Ward, District Hospital, Penang.

Years.	In patients.	Out-door patients.	Surgical cases.	Remarks.
1909	120	18	28	} 21 sub-conjunctival cases. 26 cases of cataract.
1910	136	41	46	
1911	140	52	49	
1912	211	22	46	

Balik Pulau Hospital.

REPORT BY DR. R. DANE, *Senior Medical Officer.*

1. *Buildings.*—Wards 1 and 2 were rebuilt on modern principles and occupied in October and December, respectively. Minor repairs to the Dispensary, Assistant Surgeons and Dressers' quarters were carried out during the year. A portion of Ward 2 has been screened off and reserved for the use of Malays and every endeavour is being made to induce them to come in.

2. *Staff.*—Senior Dresser EDWARDS was in charge from 1st January to 14th May.

Assistant Surgeon CHOWDBURY from 15th May to 6th July.

Assistant Surgeon MEHTA from 7th July to 31st December.

Throughout the year the staff enjoyed very good health with the exception of Dresser PAKIAM, who was transferred to Penang, owing to malaria.

3. *Work done.*—During the year 288 patients were treated as paupers, the daily average of sick being 25·02 as compared with 36·00 in the preceding year. The fall in the daily average was due to want of accommodation owing to the rebuilding of the hospital, as for the greater part of the year only one ward was available.

Of the 288 patients treated, 78 were Tamils.

The principal diseases treated were Ulcers (84) with no deaths, Malaria Fever (55) with 2 deaths, and Injuries (24) with no deaths.

Fifty-one minor operations were performed during the year, namely, Scraping of Ulcers and Sinuses (30), Incision of Abscess (12), Circumcision (4), Removal of Sequestra (5).

4. *Mortality.*—The death-rate was 9·03 as compared with 10·86 of the preceding year.

The death-rate of 9·03 falls to 7·75 by deducting 4 deaths which occurred within 48 hours of admission. Most of the deaths were due to Dysentery, Diarrhoea, Phthisis (the later being 50 per cent of the total number treated).

5. *Infectious Disease.*—No cases of infectious disease occurred during the year.

Nationality Return of the District Hospital, Balik Pulau, for the Year 1912.

Nationality.	Remained.		Admitted.		Total.		Discharged.		Transferred.		Absconded.		Died.		Remaining.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Europeans ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Eurasians ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chinese ...	25	...	164	...	189	...	120	...	10	...	6	...	24	...	29	...
Tamils ...	2	...	76	...	78	...	65	...	6	...	...	...	2	...	5	...
Malays ...	1	...	20	...	21	...	21	...	...	...	...	...	...	...	...	...
Total ...	28	...	260	...	288	...	206	...	16	...	6	...	26	...	34	...

Lumut Hospital, Dindings.

REPORT BY DR. R. DANE, *Senior Medical Officer.*

Work done.—Three hundred and ninety-one cases were admitted during the year which, with 9 remaining from the previous year, makes a total of 400 cases treated. This is 89 less than the previous year. The principal disease treated was Malaria Fever 158 cases with 21 deaths, as compared with 178 cases and 13 deaths during 1911. The average daily sick was 12·4.

Mortality.—There were 46 deaths during the year, of this number 14 died within 48 hours of admission. The causes of deaths in the 46 fatal cases are as follows:—Dysentery (12), Malaria (21), Phagedæna (2), Anæmia (1), Pneumonia (2), Phthisis (3), Diarrhœa (4) and Constipation (1). The percentage of deaths to total treated was 11·5. The percentage to total treated, excluding those dying within 48 hours of admission, was 8·29. The admissions and deaths were made up as follows:—

			<i>Admissions.</i>	<i>Deaths.</i>
			—	—
District of Dindings	...	...	150	17
Sitiawan, Lower Perak	...	...	241	29
			—	—
		Total	391	46
			—	—

Infectious Diseases.—There have been no infectious diseases throughout the year.

Police.—The health of the Malay Contingent has been good. There were 17 admissions to the hospital and 14 were treated as out-patients. No deaths occurred among them.

The Out-door Dispensary.—The number of cases treated during the year was 586, against 693 in the previous year. 211 cases were mild Malaria Fever (518 cases from the District of Dindings and 68 cases from Sitiawan). The receipts for the year amounted to \$89.77.

Vaccination.—One hundred and thirty-five children were vaccinated during the year with 20 failures.

Nationality Return of Lumut Hospital for the year 1912.

Nationalities.	Remained.	Admitted.	Total.	Discharged.	Transferred.	Absconded.	Died.	Remaining.	Remarks.
Bengalis	...	...	...	...	...	...	...	...
Chinese	5	177	182	147	2	2	28	3	
Japanese	1	9	10	10	...	...	...	...
Javanese	...	4	4	2	...	1	1	...	
Kling, Islam	...	1	1	1	...	...	...	...
Malays	...	24	24	22	...	...	1	1	
Tamils	3	176	179	156	1	...	16	6	
Total	9	391	400	338	3	3	46	10	

Leper Asylum, Pulau Jerejak.

REPORT BY DR. F. R. SAYERS, *Medical Officer.*

1. <i>Statistics.</i> —Remained on 31st Decem-ber, 1911	...	...	...	<div><div>Colonial 182</div><div>Perak 206</div><div>Selangor 33</div><div>Kedah Nil</div></div>	... 421
Admitted during 1912	...	...	...	<div><div>Colonial 90</div><div>Perak 79</div><div>Selangor 1</div><div>Kedah 6</div></div>	... 176
Total inmates					597
Discharged	...	...	...	Nil.	
Transferred	...	...	...	Nil.	
Absconded	...	...	...	<div><div>Colonial 24</div><div>Perak 5</div><div>Selangor 2</div></div>	... 31
Died	...	...	...	<div><div>Colonial 55</div><div>Perak 70</div><div>Selangor 9</div><div>Kedah 4</div></div>	... 138
Remaining on 31st December, 1912	...	...	...	<div><div>Colonial 193</div><div>Perak 210</div><div>Selangor 23</div><div>Kedah 2</div></div>	... 428

The average daily number of inmates was 417.78. The percentage of deaths was 23.11. One Chinese leper committed suicide by hanging.

2. Official visits were made during the year by:— Hon'ble Resident Councillor, Penang, Principal Civil Medical Officer, S. S., Principal Medical Officer, Federated Malay States.

3. Towkay GOH TAIK CHEE again gave each leper ten cents at the Chinese New Year. This was supplemented by 15 cents from the Anti-Mendicity Fund.

4. *Personnel.*—Mr. J. R. BRUCE continued as Assistant Surgeon. Colonial Dressers SEATON and SANTIAGO were transferred during the year and replaced by Dressers FUM THEAM FOOK and KESAVEN. Perak Dressers E. L. DORI and A. KANAPATHY PILLAY were also transferred and replaced by Dressers SITHAMPARAM PILLAY and G. SINGARAM.

5. The tables appended are:—

Table *A.*—Giving the number of admissions, total number of inmates, the number of deaths and the daily average for the last 23 years.

Table *B.*—Showing the number of inmates and the daily average in each month of the year.

Table *C.*—Showing the admissions, deaths, discharges and abscondings among Colonial, Perak, Selangor and Kedah lepers in each month.

Table *D.*—Giving the nationalities of the inmates.

Table *E.*—Showing occupation of inmates previous to admission.

6. *Treatment of Leprosy.*—Benzoyl Chloride has been applied externally and has caused a certain amount of local improvement. It has not been in use sufficiently long to give definite results. Some resistance to its administration has been encountered owing to the patients thinking that the treatment causes fresh ulceration. No patient has been willing to submit to the internal treatment with this drug.

TABLE A.

Showing the number of admissions, total number of inmates, the number of deaths and the daily average for the last 23 years.

Years.	Remained from previous years.	ADMISSIONS.				Total.	Deaths.	Percentage of deaths.	Daily Average.
		Colonial.	Perak.	Selangor.	Kedah.				
1890	...	160	137	129	...	426	91	21.36	183.33
1891	...	221	132	...	...	353	123	34.84	195.07
1892	...	137	178	110	...	475	122	25.68	282.96
1893	...	310	118	4	...	432	87	20.13	307.80
1894	...	321	111	60	...	492	129	26.21	311.18
1895	...	332	121	34	...	487	146	29.97	313.06
1896	...	301	145	24	...	470	136	28.93	303.37
1897	...	286	152	...	...	438	130	29.68	278.64
1898	...	253	152	16	...	421	123	29.21	262.10
1899	...	247	123	20	...	390	142	36.41	239.15
1900	...	214	97	59	...	370	115	31.08	214.15
1901	...	233	80	29	...	342	88	25.73	233.35
1902	...	235	84	33	...	352	73	20.73	243.27
1903	...	244	119	71	...	434	84	19.35	264.53
1904	...	334	92	42	...	468	140	29.91	311.02
1905	...	282	148	36	...	466	78	16.73	319.73
1906	...	357	107	32	...	496	138	27.82	344.30
1907	...	336	100	52	...	488	110	22.54	361.74
1908	...	356	98	52	...	506	107	21.15	383.73
1909	...	370	90	117	...	577	134	23.22	396.67
1910	...	420	97	94	...	611	186	30.44	413.83
1911	...	385	76	90	50	601	157	26.12	404.37
1912	...	421	90	79	1	597	138	23.11	417.78

TABLE B.

Showing the number of inmates during 1912.

Months.				Total treated.	Daily average.
January	...	...	...	428	422.42
February	...	...	...	415	404.96
March	...	...	...	409	398.56
April	...	...	...	450	425.63
May	...	...	...	442	426.86
June	...	...	...	427	413.90
July	...	...	...	413	404.87
August	...	...	...	444	422.56
September	...	...	...	443	431.86
October	..	...	...	440	425.51
November	...	...	...	425	414.36
December	...	...	...	437	421.96

TABLE C.

Showing the Admissions, Deaths, Discharges and Abscondings among Colonial, Perak, Selangor and Kedah Lepers in each Month of 1912.

MONTHS.	Total Admissions.	ADMISSIONS.				DEATHS.				DISCHARGED.				TRANSFERRED.				ABSCONDED.			
		Colonial.	Perak.	Selangor.	Kedah.	Colonial.	Perak.	Selangor.	Kedah.	Colonial.	Perak.	Selangor.	Kedah.	Colonial.	Perak.	Selangor.	Kedah.	Colonial.	Perak.	Selangor.	Kedah.
January	7	1	...	...	6	6	5	3	1	...	...	...	...	1	...	...	...	1	...	...	...
February	3	3	...	...	...	6	6	...	1	...	...	...	...	1	2	...	...	1	...	...	...
March	10	10	...	...	...	1	...	2	...	...	...	...	...	4	...	...	...	4	...	...	...
April	48	19	29	...	...	4	6	...	...	...	...	...	...	2	...	...	...	2	...	...	...
May	4	4	...	...	...	8	10	...	...	...	...	...	...	5	...	...	...	5	...	...	...
June	8	7	...	...	...	3	6	...	...	...	...	...	...	4	3	...	...	4	3	...	...
July	4	3	1	1	...	3	4	1	1	...	...	...	...	2	...	...	...	2	...	2	...
August	42	18	24	...	...	3	6	...	...	...	...	...	...	2	...	...	...	2	...	...	...
September	10	10	...	...	...	3	7	1	...	...	...	...	...	2	...	...	...	2	...	...	...
October	10	10	...	...	...	5	9	1	1	...	...	...	...	1	...	...	...	1	...	...	...
November	2	2	...	...	...	7	8	1	...	...	...	...	...	...	...	...	...	...	...	...	...
December	28	3	25	...	...	6	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	176	90	79	1	6	55	70	9	4	...	...	...	...	24	5	2	...	24	5	2	...

TABLE D.

Showing the Nationalities of Inmates.

Nationalities.		Colonial.	Perak.	Selangor.	Kedah.	Total number.
Chinese	Hokkien ...	44	29	4	...	77
	Teichiu ...	44	20	...	5	69
	Cantonese ...	93	119	8	...	220
	Kheh ...	43	75	12	1	131
	Hailam ...	20	11	4	...	35
	Kow Chu ...	...	1	...	...	1
	Lui Chu ...	...	...	1	...	1
	Arab ...	1	...	...	...	1
	Eurasians ...	1	...	...	...	1
	Malays ...	1	...	1	...	2
	Kling, Islam	2	...	...	...	2
	Tamils ...	21	31	4	...	56
	Javanese ...	1	...	...	...	1
Total ...		271	286	34	6	597

TABLE E.

Showing the Occupation of Inmates for the Year 1912.

—		Colonial.	Perak.	Selangor.	Kedah.	Total number.
Actor ...	...	1	...	...	...	1
Barber ...	...	2	3	...	...	5
Basket-maker ...	...	3	2	...	...	5
Beggars ...	...	2	...	...	...	2
Boatmen ...	...	5	...	...	...	5
Boy ...	...	2	...	...	...	2
Butcher ...	...	2	...	...	...	2
Blacksmith ...	...	6	3	1	...	10
Cart-driver ...	...	5	3	...	...	8
Carpenter ...	...	13	8	1	...	22
Cook ...	...	9	1	1	...	11
Cake-seller ...	...	3	1	...	...	4
Dhoby ...	...	3	...	...	...	3
Fisherman ...	...	4	...	...	...	4
Fireman ...	...	1	1	...	...	2
Fortune teller ...	...	...	1	...	...	1
General coolie ...	...	141	90	6	...	237
Gardener (vegetable) ...	...	9	21	2	5	37
Goldsmith ...	...	2	...	...	...	2
Hawker ...	...	3	...	...	...	3
Mason ...	...	2	3	...	...	5
Miner (tin) ...	...	6	121	18	1	146
Painter ...	...	2	...	1	...	3
Planter ...	...	6	...	...	...	6
Post-peon ...	...	1	...	...	...	1
'Rikisha puller ...	...	8	1	...	...	9
Sailor ...	...	3	...	...	...	3
Shoe-maker ...	...	...	2	...	...	2
Tailor ...	...	3	2	...	...	5
Trader ...	...	4	2	3	...	9
Tin maker ...	...	2	...	...	...	2
Tindal ...	...	...	1	...	...	1
Woodcutter ...	...	7	12	1	...	20
Nil. ...	...	12	7	...	...	19
Total ...		272	285	34	6	597

APPENDIX C.

PROVINCE WELLESLEY.

REPORT BY DR. R. D. FITZGERALD, *Medical Officer*.

1. The health of the Province has been good throughout the year. There has been no outbreak of acute infectious diseases.

2. The registered births numbered 4,456 and deaths 3,679, as compared with 3,789 and 3,979, respectively, in 1911. The estimated population was 130,803.

3. There was a marked diminution in the death-rate due to dysentery and diarrhoea. There has been less malaria. Phthisis is increasing.

A report concerning the apparent increase of Ankylostomiasis is appended.

4. The swamp at Bagan Tuan Kechil is to be filled in, and the swamp adjoining the Butterworth Hospital compound is being watched for anopheles with the view, if dangerous, of its being filled in also.

5. The work of raising the dam at Bukit Seraya has been completed. The water supply from the Bukit Panchor Reservoir has been improved by the filling in of tributary swamps and by the scouring of the mains, but in spite of this it is still certain the water requires to be filtered, a work to be undertaken next year.

6. Efforts were made during the year to encourage the Dressers to study. An examination was held which showed considerable progress.

7. After many difficulties had been overcome the vaccinations by Gurus (native schoolmasters) was commenced at the end of the year. This scheme has been in force elsewhere in the Peninsula and already shows signs of being very useful here. This is merely additional to the old scheme and not likely to replace it.

8. Dr. WHITTLE was in medical charge throughout the year until I relieved him on 13th December.

9. Assistant Surgeons DUTTA and SINHA did good work at Sungai Bakap and Bukit Mertajam Hospitals. Mr. FERNANDEZ relieved Mr. DE SOUZA at Butterworth on the 14th of May.

Butterworth Hospital.

Buildings.—Buildings underwent lime-washing and minor repairs were carried out during the year. A large window was made in the wall of the office to afford light for microscopical work. In December the sheds of the Quarantine Camp were pulled down and the cement flooring for the new sheds was started.

Staff.—Assistant Surgeon C. T. DE SOUZA was transferred to the Tan Tock Seng's Hospital, Singapore, on the 4th May, 1912; and was relieved by Assistant Surgeon P. C. FERNANDEZ.

During the latter half of November Dresser YAHAYA was put on vaccination duty and his place was taken by Dresser SAMUEL from Bukit Mertajam.

Work done.—The following figures represent the work done during the year :—

Remaining from 1911	...	...	...	...	29
Admitted during 1912	...	...	...	...	905
Total treated	...	...	...	...	934
Average daily number of sick	...	...	...	...	48.76
Discharged	...	...	...	...	799
Transferred	...	...	...	...	2
Absconded	...	...	...	...	13
Died	...	...	...	...	80
Percentage of deaths to total treated	...	...	...	...	8.56
Percentage of deaths to total treated excluding those dying within 48 hours of admission	...	...	...	...	7.57

The principal diseases treated were:—

	<i>Cases.</i>	<i>Deaths.</i>	<i>Mortality%.</i>
	—	—	—
Anæmia	3	...	...
Ankylostomiasis	46	4	8·69
Beri-beri	10	1	10·00
Cholera	1	...	...
Diarrhœa	17	6	35·29
Dysentery	35	2	5·71
Gonorrhœa	36	...	...
Leprosy	3	...	...
Malaria	131	9	6·87
Nephritis	9	3	33·33
New-growth (malignant)	5	2	40·00
Pneumonia	10	3	30·00
Chancroids	32	...	...
Syphilis	80	1	1·25
Tuberculosis	31	12	38·70
Valvular Disease of heart	3	...	...
Wounds	191	5	2·62
Yaws	6	...	...

Operations.—One hundred and sixty operations were performed during the year.

Operation on Tumours:—

Removal of Sarcoma knee	1
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Operation for Abscess:—

Incision and Curettage	33
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Removal of Foreign bodies:—

Removal of a piece of bamboo from foot	2
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Operations on Arteries and Veins:—

Intravenous Saline	5
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Intravenous Salvarsan	2
-----------------------	-----	-----	---

Operation on Lymphatics:—

Removal of Glands by Curetting	5
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Operations on Bones:—

Sequestrotomy	2
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Setting Fracture	2
------------------	-----	-----	---

Operations on Joints:—

Reduction of Dislocation Hip	1
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Exploration of Knee Joints	2
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Aspiration of Joints	4
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Operations on Muscles:—

Suturing Severed Muscles	19
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Amputations:—

Maurice-Perrin's Subastragaloid Amputation	1
--	-----	-----	---

Amputation of finger	2
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Amputation of Toe	1
-------------------	-----	-----	---

Operation on Skull:—

Trephining	2
------------	-----	-----	---

Operation on Face :—

Plastic Operation for hare-lip	2
Antral puncture	...	...	...	1

Operation on Eye and its Appendages :—

Excision of eye-ball	...	...	...	1
Iridectomy	...	...	...	1
For Cataract	...	...	...	1

Dental Operation :—

Extraction Teeth	3
------------------	-----	-----	-----	---

Operation on Thorax :—

Paracentesis of Pleura	...	...	...	1
Resection of rib for Empyema	...	...	...	1

Operation on Abdomen :—

Paracentesis Abdominis	...	...	...	15
Laparotomy	...	...	...	1
Laparotomy (Ectopic)	...	...	...	1
Radical Cure for Inguinal Hernia	...	...	...	2
Omentopexy	...	...	...	1
Splenectomy	3

Operation on Rectum and Anus :—

Whitehead's Operation for Hæmorrhoids	1
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Operation on Urethra :—

Dilatation of Stricture	1
-------------------------	-----	-----	-----	---

Operation on Male Generative Organ :—

Circumcision	...	...	...	17
Cauterisation Penis	...	...	...	2
Amputation Penis	...	...	...	1
Radical Cure for Hydrocele	...	...	...	2
Removal of Testis	...	...	...	3

Operation on Female Generative Organ :—

Application Forceps	...	...	...	2
Redressed Wound of Abdomen under Chloroform	...	...	...	13

Anæsthetics used were :—

1. Cocaine in 25 cases.
2. Chloroform in 68 cases.
3. Stovaine in 20 cases.

All major operations on the abdomen and lower extremities were performed under Spinal Anæsthesia.

Microscopical examination of the blood in all fever cases has been carried out throughout the year. The stools, urine and sputa of a large number of patients have been also microscopically examined.

Several severe cases of Secondary Syphilis and obstinate cases of Frambœsia were admitted during the year. We had 6 tubes of "Salvarsan" and the intravenous injection of this drug was in most instances a success.

Out-door Dispensary.—The number of patients treated at the Out-door Dispensary was 1,056 as against 1,138 in 1911. The receipts amounted to \$148.92 as against \$182.94 in 1911.

Those treated included:—

					Males.	Females.
					—	—
Europeans	...	...	...	...	44	30
Eurasians	...	...	...	...	65	33
Chinese	...	...	...	...	197	9
Malays	...	...	...	...	196	29
Indians	...	...	...	...	385	60
Others	...	...	...	...	8	...

The principal diseases treated were:—

Malaria	...	...	...	...	...	56
Syphilis	...	...	...	...	...	60
Anæmia	...	...	...	...	...	25
Diarrhœa	...	...	...	...	...	31
Wounds	...	...	...	...	...	279
Ankylostomiasis	...	...	...	...	...	2
Ascaris Lumbricoides	...	...	...	...	...	17
Scabies	...	...	...	...	...	6

Medico-legal.—The Coroner sent in 16 dead bodies for post-mortem examination. Sixteen inquests were held. The Police sent up 31 persons for observation on their mental condition.

Medical evidence was given at the Police Courts on 17 occasions.

Fifty recruits for the Police Force were examined and 4 were rejected. Forty-six necropsies on patients dying in the hospital were performed.

Bukit Mertajam Hospital.

1. The work of renovation of the old contagious diseases ward was completed, and it is now used for the treatment of phthisical patients. The female ward was doubled at the expense of the male ward. General repairs and painting was done to all wards, kitchen, bath-room and latrines.

The operating theatre is to be enlarged next year.

The Federated Malay States Railway Department have just completed a temporary ward in the newly extended hospital compound for the treatment of coolies working at the Kedah Railway extension.

2. The following figures briefly summarise the work done:—

Remaining from 1911	...	...	...	...	50
Admitted during the year	...	...	...	...	1,453
Total treated	...	...	...	...	1,503
Average daily number of sick	...	...	...	...	59.47
Discharged	...	...	...	...	1,298
Transferred	...	...	...	...	12
Died	...	...	...	...	125
Percentage of deaths to total treated	...	...	...	...	8.31
Percentage of deaths to total treated excluding those dying within 48 hours of admission	...	...	...	...	5.70

The capacity of the hospital was taxed to its utmost, chiefly in the latter half of the year, due to the great influx of men in connection with the railway construction work. This congestion will be relieved with the opening of the new railway ward.

The number of paying patients this year was 83 as compared with 15 in last year, and the number of estate coolies 281 in place of 233.

3. The principal diseases treated with deaths were:—

				<i>Cases.</i>	<i>Deaths.</i>	<i>Mortality %.</i>
				—	—	—
Anæmia	...	...	...	2	...	...
Ankylostomiasis	...	...	...	128	17	13·28
Beri-beri	...	...	...	16	4	25·00
Cerebro-Spinal Fever	...	...	...	1	...	...
Diarrhœa	...	...	...	21	2	9·52
Dysentery	...	...	...	64	17	26·56
Enteric Fever	...	...	...	1	...	...
Gonorrhœa	...	...	...	44	1	2·27
Leprosy	...	...	...	8	1	12·5
Malaria	...	...	...	214	17	7·94
Nephritis	...	...	...	26	5	19·23
New-growth (malignant)...	...	...	...	14	7	50·00
Pneumonia	...	...	...	14	4	28·57
Soft Chancre	...	...	...	32	...	...
Syphilis	...	...	...	108	2	1·85
Tuberculosis...	...	...	...	48	23	47·91
Valvular Disease of heart	...	...	...	21	3	14·28
Wounds	...	...	...	201	2	0·99
Yaws	...	...	...	1	...	...

As a result of examination of stools in all cases of anæmia, ulcer, skin diseases, abdominal complaints, etc., an unexpected prevalence of Ankylostomiasis was detected. It was proportionately commoner amongst the Tamil and Javanese coolies than amongst the Chinese.

The figure 128 does not represent all cases where Hook-worm ova was found in the stool. They were detected also in patients suffering from Beri-beri, Nephritis, Organic Lesions of Mitral Valve, Malaria in all forms, Cancer of Liver, Arthritis, Sloughing Scrotum, etc.

Thirty-two necropsies on patients dying in the hospital were performed.

4. *Surgical operations.*—Operation on Cysts:—

Removal by Enucleation of a Sebaceous Cyst	...	...	1
Removal by Enucleation of a Dermoid Cyst Angle of Orbit	...	...	1

Operation for Abscess:—

Incision	...	...	32
Incision and Drainage	...	...	19

Removal of foreign bodies:—

Removal of a piece of bamboo from foot	...	...	1
Removal of a needle from wrist	...	...	1
Removal of a tamarind seed from a child's nose	...	...	1

Operation on Lymphatics:—

Removal of enlarged glands in groin by excision	...	...	28
Incision and scraping for Tuberculous Glands	...	...	5

Operation on Skin and Subcutaneous Tissues:—

Theirsch's Skin-grafting	...	...	2
Injection of Saline Fluid Subcutaneously	...	...	3
Incision and partial excision for Carbuncle	...	...	1
Long Incision for Cellulitis	...	...	8
Scraping of Ulcers	...	...	25

Operation on Bones :—

Sequestrotomy	...	...	...	...	17
Removal of Tuberculous Lesions	...	...	...	...	4

Operation on Joints :—

Reduction of dislocation shoulder	...	...	...	...	1
Reduction of dislocation of elbow	...	...	...	...	2
Reduction of dislocation of lower jaw	...	...	...	...	4
Passive movements	...	...	...	...	6
Tapping knee joint	...	...	...	...	1
Arthrectomy (knee, ankle and wrist)	...	...	...	...	3
Excision of elbow joint	...	...	...	...	1

Operation on Muscle :—

Suturing of extensively cut muscles on chest and abdominal wall	1
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Amputations :—

Maurice-Perrin's Subastragaloid Amputation	1
Stephen-Smith's Disarticulation through knee	1
Amputation of toe	...	...	...	...	2

Operation of Skull :—

Trephining of Frontal Sinuses	...	...	...	...	1
Elevation of a depressed fracture of frontal bone	...	...	...	...	1

Operation of Spine and spinal Cord :—

Lumbar Puncture of Subarachnoid Space and Injection of Stovaine	2
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Operation on Eye and its Appendages :—

For Entropion	3
Paracentesis of Anterior Chamber	1
Excision of Eye-ball	1

Dental Operation :—

Extraction of teeth	22
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Operation on Larynx and Trachea :—

Suturing of divided Trachea	1
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Operation on the Thorax :—

Paracentesis of Pleura	3
Transthoracic incision with resection of rib for drainage of Hepatic Abscess	1

Operation on the Abdomen :—

Paracentesis	...	...	...	...	26
Radical Cure of Hernia Congenital	...	...	...	...	1
Omentopexy	...	...	...	...	1
Operation for Anal Fistulæ	...	...	...	...	2

Operation on Urethra :—

Passing of Catheter	...	...	...	...	110
Rapid Dilatation of Stricture	...	...	...	...	6
Operation for Urethral Fistulæ	...	...	...	...	2

Operation on Male Generative Organs :—

Circumcision	...	...	...	...	24
Removal of Testis	...	...	...	...	2

Operation on Female Generative Organs:—

Dilatation of Cervical Canal	...	...	...	2
Reduction of retroverted gravid uterus	...	...	...	2
Separation and Extraction of Placenta and membranes after delivery	...	...	...	2

5. *Out-patient Department.*—The number of out-patients treated were 2,664. In addition to these 144 assault cases brought by Police were also treated as out-patients.

The receipts amounted to \$420.74.

The nationalities of the patients were:—

Europeans	...	...	...	...	60
Eurasians	...	...	...	...	98
Chinese	...	...	...	...	1,276
Malays	...	...	...	...	250
Indians	...	...	...	...	927
Others	...	...	...	...	43

The principal diseases treated were:—

Anæmia	...	...	...	...	41
Beri-beri	...	...	...	...	5
Diarrhœa	...	...	...	...	63
Dysentery	...	...	...	...	43
Gonorrhœa	...	...	...	...	44
Malaria	...	...	...	...	218
Nephritis	...	...	...	...	8
Pneumonia	...	...	...	...	3
Soft Chancre	...	...	...	...	50
Syphilis	...	...	...	...	171
Tuberculosis	...	...	...	...	3
Valvular Disease of heart	...	...	...	...	2
Helminthiasis	...	...	...	...	48
Wounds	...	...	...	...	626

6. *Medico-legal.*—The Coroner sent in 28 bodies for post-mortem examination. The Police sent up 160 cases for examination or treatment including 12 persons for observation on their mental condition.

Medical evidence was given at the Police Courts on 27 occasions.

Sungai Bakap Hospital.

1. *Buildings and Grounds.*—Both have been in good order throughout the year. No major works were carried out by the Public Works Department except that of re-metalling the hospital road and minor repairs to the contagious shed, main wards and some of the out-houses including Assistant Surgeon's quarters. A new operating theatre is to be built next year.

2. *Staff.*—The Assistant Surgeon was stationed unchanged throughout the year.

3. *Work done.*—The following figures represent the work done during the year:—

Remaining from 1911	...	...	...	34
Admitted during 1912	...	...	...	882
Total treated	...	...	...	916
Average daily number of sick	...	...	...	36.53
Discharged	...	...	...	787
Transferred	...	...	...	3
Absconded	...	...	...	2
Died	...	...	...	97
Percentage of deaths to total treated	...	...	...	10.58
Percentage of deaths to total treated excluding those dying within 48 hours of admission	...	...	...	7.87

4. The principal diseases treated with deaths and percentage of mortality for each :—

	<i>Cases.</i>	<i>Deaths.</i>	<i>Mortality%.</i>
Anæmia	9	1	11·11
Ankylostomiasis	76	22	28·94
Beri-beri	11	...	...
Diarrhœa	18	8	44·44
Dysentery	48	20	41·66
Gonorrhœa	11	...	...
Leprosy	2	...	...
Malaria	96	4	4·16
Nephritis	3	...	...
New-growth (malignant)	7	2	28·57
Pneumonia	10	5	50·00
Soft Chancre	25	...	...
Syphilis	102	...	...
Tuberculosis	34	12	35·29
Valvular Disease of heart	17	3	17·64
Wounds	170	3	1·76
Yaws	1	...	...

5. Fifty-four necropsies on patients dying in the hospital were performed during the year.

6. Ninety-nine operations were performed as follows. There were no deaths resulting from operation or anæsthesia.

Operations on Tumours :—

Excision of Cyst ... ..	...	...	2
Partial excision and curetting of Malignant growth ... ..	...	...	1

Operations on Abscess, Cellulitis, etc. :—

Incisions and Drainage for Abscess ... ..	...	...	10
Incision for Cellulitis ... ..	...	...	4
Crucial Incision for Carbuncle ... ..	...	...	1

Operations on Arteries and Veins :—

Ligature of Popliteal Vessels for injury	1
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Operations on Lymphatics :—

Excision of Enlarged Glands	11
Incision and Curetting for Suppurative Bubo	7

Operations on Skin and Subcutaneous Tissues :—

Theirch's Skin Grafting for Chronic Ulcer	4
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Operation on Bones :—

Removal of Sequestra for Necrosis	1
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Operations on Joints :—

Arthrectomy for Tubercular Disease	2
Excision of lower jaw for malignant growth	1

Amputation :—

Amputation of fingers and toes for disease and injury	7
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Operations on Brain and Meninges :—

Removal of extra dural clot for injury	1
Excision of a portion of cortex of brain for injury	1

Operation on Face :—

Plastic operation for hare-lip	1
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Operations on Eye and Appendages :—

For Pterygium	1
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Excision of Eye-ball for Panophthalmitis	1
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Dental Operation :—

Extraction of teeth for caries	1
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Operation on Thorax :—

Paracentesis Pleura	1
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Operations on Abdomen :—

Paracentesis Abdominis	4
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Exploratory Laparotomy for Malignant Growth Liver	1
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Laparotomy for Volvulus	1
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Enterorrhaphy for Ruptured Intestine	1
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Radical Cure for Inguinal Hernia	2
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Operation on Urethra :—

Dilatation of Strictures	3
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Incisions for Extravasation of Urine...	1
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Operations on Male Generative Organs :—

Circumcision	17
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Amputation of Penis for Malignant Growth	3
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Radical Cure for Hydrocele	5
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Removal of Testis for Hernia Testis	1
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Operation on Female Generative Organs :—

Repair of Ruptured Perineum	1
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Out-door Dispensary.

7. Seven hundred and forty-nine patients were treated during the year as compared with 651 in 1911.

The collection amounted to \$128.10 as compared with \$80.60 in 1911.

(a) Nationalities of the out-patients treated as follows :—

					<i>Males.</i>	<i>Females.</i>
					—	—
Europeans	...	...	...	...	21	4
Eurasians	...	...	...	...	4	4
Chinese	...	...	...	...	276	72
Malays	...	...	...	...	105	13
Indians	...	...	...	...	161	46
Others	...	...	...	...	12	31
					—	—
Total					579	170
					—	—

(b) The principal diseases treated were as follows :—

Anæmia	...	...	...	...	...	15
Diarrhœa	...	...	...	...	...	3
Dysentery	...	...	...	...	...	1
Gonorrhœa	...	...	...	...	...	13
Helminthiasis	...	...	...	...	...	7
Malaria	...	...	...	...	...	87
New-growth (malignant)	...	...	...	...	...	1
Soft Chancre	...	...	...	...	...	12
Syphilis	...	...	...	...	...	50
Tuberculosis	...	...	...	...	...	7
Valvular Disease of heart	...	...	...	...	...	2
Wounds	...	...	...	...	...	147
Yaws	...	...	...	...	...	1

8.—(1) *Medico-legal*.—The Coroner sent in 54 dead bodies for the post-mortem examination. Fifty-four inquests were held. Twenty-five verdicts were returned of deaths from natural causes, 4 of homicide, 10 of suicide and 15 of accidental deaths.

(2) The Police sent up 260 cases for examination or treatment including 5 persons for observation on their mental condition.

(3) Medical evidence was given at the Police Courts on 57 occasions.

9. *Vaccination*.—One thousand three hundred and thirty-six children were vaccinated with 151 failures. The percentage of failure being 11·30.

10. *Police*.—The health of the Police has been good. Twenty-one admissions during the year with no death.

11. *Public Health*.—The health of the district has been good. No epidemic diseases have occurred. The sanitation of the district has been improved with reduction of the cases of dysentery and diarrhœa. On the other hand cases of ankylostomiasis are increasing. More careful observation has revealed more cases. Most of the cases were estate labourers either at the time of admission into the hospital or sometime previously. In several instances it was noticed that the whole family was seriously infected, and some of them proved to be fatal.

12. *Rainfall*.—The total rainfall this year has been 90·99" as compared with 68·48" in the last.

Estates and Estate Hospitals.

Twenty-nine Estates were inspected during the year; most of these were visited several times and reported on in detail to the Senior Medical Officer, Penang, who through the Hon'ble Resident Councillor, Penang, "the Local Authority" issued appropriate orders.

Efforts have been made to improve the housing accommodation, the scavenging of the lines and the water supply, all of which are poor throughout the Province Estates. All estates have been ordered to instal satisfactory latrine accommodation.

Appended are summaries of the work done by the eight Estates Hospitals of the Province.

1. *Bertam Estate*.—Progress has been made in the re-housing of the coolies. Much work had to be undertaken to procure a proper water supply, but the management has now undertaken to supply water to the lines through pipes from a small reservoir by means of a donkey pump.

Latrines have been provided but they are not much used.

Average number of coolies resident on estate in 1912 :—Tamils 1,055, Javanese 443 and Chinese 400.

Number of admissions to hospitals	...	...	...	583
Number of deaths in hospitals	...	...	...	23
Percentage of deaths to total coolie population	...	...	...	1·21

The principal diseases treated :—

				<i>Admissions. Deaths.</i>	
				—	—
Anæmia	...	...	...	3	...
Ankylostomiasis	...	...	...	5	...
Bowel disorders	...	...	...	131	14
Malarial diseases	...	...	...	4	...
Ulcers	...	...	...	121	...
Venereal diseases	...	...	...	164	...

2. *Malakoff Estate*.—Most of the old lines have been replaced by type buildings during the year.

Latrines are provided and the surrounding of the lines are kept much cleaner than formerly.

Average number of coolies resident on estate in 1912 :—Tamils 630, Javanese 310 and Chinese 88.

Number of admissions to hospitals	...	...	...	393
Number of deaths in hospitals	...	...	...	7
Percentage of deaths to total coolie population	...	...	...	0·68

The principal diseases treated were :—

				<i>Admissions. Deaths.</i>	
				—	—
Anæmia	...	...	...	24	...
Ankylostomiasis	...	...	...	...	...
Bowel disorders	...	...	...	35	...
Malarial diseases	...	...	...	3	2
Phthisis	...	...	...	3	...
Ulcers	...	...	...	81	...
Venereal diseases	...	...	...	132	...

3. *Prye Estate*.—The health of this estate has greatly improved since the complete re-housing of the coolies.

Average number of coolies resident on estate in 1912 :—Tamils 561 and Javanese 348.

Number of admissions to hospitals	...	...	...	327
Number of deaths in hospitals	...	...	...	10
Percentage of deaths to total coolie population	...	...	...	1·10

The principal diseases treated were:—

					<i>Admissions. Deaths.</i>	
					—	—
Anæmia	...	...	...	...	1	1
Ankylostomiasis	...	...	...	...	13	...
Bowel disorders	...	...	...	...	38	1
Malarial diseases	...	...	...	...	22	1
Phthisis	...	...	...	...	1	...
Ulcers	...	...	...	...	47	...
Venereal diseases	...	...	...	...	43	1

4. *Batu Kawan Estate*.—Progress has been made in the provision of type lines for the coolies.

Further improvements have been made for the filtering of the water from the reservoir and for the irrigation of the drains.

Average number of coolies resident on estate in 1912:—Tamils 539, Javanese 358 and Chinese 65.

Number of admissions to hospitals	...	...	...	440
Number of deaths in hospitals	...	...	...	14
Percentage of deaths to total coolie population	...	...	...	1.45

The principal diseases treated were:—

					<i>Admissions. Deaths.</i>	
					—	—
Anæmia	...	...	...	...	15	...
Ankylostomiasis	...	...	...	...	5	1
Bowel disorders	...	...	...	...	37	4
Malarial diseases	...	...	...	...	34	1
Phthisis	...	...	...	...	8	...
Ulcers	...	...	...	...	37	...
Venereal diseases	...	...	...	...	19	...

5. *Val d'or Estate*.—A ward for infective diseases has been built. The water supply is improved and is more potable.

Average number of coolies resident on estate in 1912:—Tamils 377, Javanese 134 and Chinese 48.

Number of admissions to hospitals	...	...	...	158
Number of deaths in hospitals	...	...	...	7
Percentage of deaths to total coolie population	...	...	...	1.16

The principal diseases treated were:—

					<i>Admissions. Deaths.</i>	
					—	—
Anæmia	...	...	...	...	1	...
Ankylostomiasis	...	...	...	...	4	...
Bowel disorders	...	...	...	...	34	2
Malarial diseases	...	...	...	...	30	2
Phthisis	...	...	...	...	4	...
Ulcers	...	...	...	...	53	...
Venereal diseases	...	...	...	...	22	...

6. *Bakap Plantation*.—The estate has been ordered to re-house its coolies.

Average number of coolies resident on estate in 1912 :—Tamils 156, Javanese 246 and Chinese 30.

Number of admissions to hospitals ...	...	...	188
Number of deaths in hospitals ...	...	...	6
Percentage of deaths to total coolie population ...	...	...	1·38

The principal diseases treated were :—

				<i>Admissions.</i>	<i>Deaths.</i>
				—	—
Anæmia ...	...	...	...	9	...
Ankylostomiasis ...	...	...	...	8	...
Bowel disorders ...	...	...	...	32	...
Malarial diseases ...	...	...	...	2	...
Ulcers ...	...	...	...	16	...
Venereal diseases ..	...	...	...	5	...

7. *Caledonian Estate*.—Progress is shown in the building of the new hospital. Average number of coolies resident on estate in 1912 :—Tamils 3,178, Javanese 688 and Chinese 746.

Number of admissions to hospital ...	...	...	1,592
Number of deaths in hospital ...	...	...	74
Percentage of deaths to total coolie population ...	...	...	1·60

The principal diseases treated were :—

				<i>Admissions.</i>	<i>Deaths.</i>
				—	—
Anæmia ...	...	...	...	5	...
Ankylostomiasis ...	...	...	...	14	...
Bowel disorders ...	...	...	...	274	44
Malarial diseases ...	...	...	...	127	1
Phthisis ...	...	...	...	4	3
Ulcers ...	...	...	...	412	...
Venereal diseases ...	...	...	...	118	...

8. *Byram Estate*.—Average number of coolies resident on estate in 1912 :—Tamils 511, Javanese 943 and Chinese 13.

Number of admissions to hospitals ...	...	...	604
Number of deaths in hospitals ...	...	...	19
Percentage of deaths to total coolie population ...	...	...	1·29

The principal diseases treated were :—

				<i>Admissions.</i>	<i>Deaths.</i>
				—	—
Anæmia ...	...	...	...	7	2
Ankylostomiasis ...	...	...	...	2	...
Bowel disorders ...	...	...	...	139	13
Malarial diseases ...	...	...	...	78	...
Phthisis ...	...	...	...	1	...
Ulcers ...	...	...	...	86	...
Venereal diseases ...	...	...	...	155	...

Diseases.	1911.						1912.						Remarks.						
	Remained.			Admitted.			Died.			Remained.				Admitted.			Died.		
	Total.			Total.			Total.			Total.				Total.			Total.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.		Male.	Female.	Total.	Male.	Female.	Total.
Syphilis, Primary ...	...	...	...	26	...	26	...	...	...	...	...	...	43	2	45	...	...	...
Do. Secondary ...	4	...	4	183	5	188	...	8	8	191	20	211	2	2	...	...	...	2
Do. Tertiary ...	1	1	2	15	...	15	...	2	2	22	2	24	...	...	...	...	...	...
Do. Congenital ...	...	...	...	...	...	...	...	...	...	...	1	1	...	1	1	...	1	1
Chancroids ...	...	...	...	51	1	52	...	1	1	83	4	87	...	...	...	...	...	...
Gonorrhœa ...	2	1	3	77	17	94	...	...	...	69	12	81	...	...	...	...	...	...
Total ...	7	2	9	352	23	375	...	11	11	408	41	449	2	1	3	...	...	...

Percentage of female patients as prostitutes=2'32.

Ankylostomiasis.

REPORT ON, BY DR. E. D. WHITTLE.

The tables herewith, illustrative of Ankylostomiasis in Province Wellesley Hospitals, contain matter of some general interest.

Ankylostomiasis was diagnosed first in Province Wellesley in 1904, at Butterworth and Bukit Mertajam. It was not recognized at Sungai Bakap till 1906.

The Ankylostomiasis, we are here concerned with, is a pauperising and crippling disease driving its reluctant victims into our Hospitals: its relationship with the fact observed by Dr. MACAULAY of Seremban and others that the pathognomonic ova can be discovered in the stools of 80 per cent of all Tamil coolies is a matter of urgency that awaits elucidation. The prevalence of the disease has increased yearly practically without remission since its recognition in the Province. That this is not a fictitious increase due to greater accuracy in the search for the specific ova is shown by the remarkable constancy for the last five years in the case mortality, indicated by the dotted line in Table 1. The constancy of the case mortality is disappointing in view of the energetic attempts at treatment that have been made during the last year or two and points again to the idea above mooted that we receive into our Hospitals only the end results of this infection.

An analysis of the last two hundred cases admitted gives the following results:—

Distribution.—One hundred and twenty-five were untraced paupers. Seventy-five were admitted from and paid for by the several estates of the Province; no less than 27 of these came from the small estates of Sungai Duri Valley, the total coolie population of which does not exceed 1,000. This 27 by no means exhausts the number of patients admitted from this valley; at the moment of writing there are five pauper patients in Sungai Bakap Hospital who had been working on one estate in this area until their break-down in health and consequent dismissal. The greater number (30) of the remainder came from Malakoff, Juru, Alma and Golden Grove, all of which estates are either inland or have their coolie lines on high ground.

These figures are too small to bear great deductions, but it is of interest to note the apparent relative freedom of the lower and sea-side estates the ground water of which in most instances is too brackish to be palatable and to correlate this with the fact, demonstrated by Leonard Hill, I believe, of the immunity of those mines in Cornwall whose leaky walls admitted sea water.

RACE DISTRIBUTION OF CASES.

					<i>Nationality.</i>	<i>Deaths.</i>	<i>Rate per cent.</i>
					—	—	—
Tamils	...	...	...	...	152	42	28·3
Chinese	...	...	...	...	27	3	11·1
Javanese	...	...	...	...	15	2	13·3
Bengalis	...	...	...	...	4	...	...
Malays	...	...	...	...	2	1	...
Total					200	48	24

SEX.

					<i>Sex.</i>	<i>Deaths.</i>	<i>Rate per cent.</i>
					—	—	—
Males	...	...	...	...	166	34	20·5
Females	...	...	...	...	34	14	41
Total					200	48	24

Age.—The admissions per quinquennium of life are shown in Table 2 with the absolute and the relative mortality. It will be seen that whilst the onset of the disease occurs mainly in early adult life, no age is exempt and that the percentage mortality is apparently very much greater at the extreme of life.

TABLE 1

ANKYLOSTOMIASIS IN THE THREE GOVERNMENT HOSPITALS, P. W. 1903 - 1912

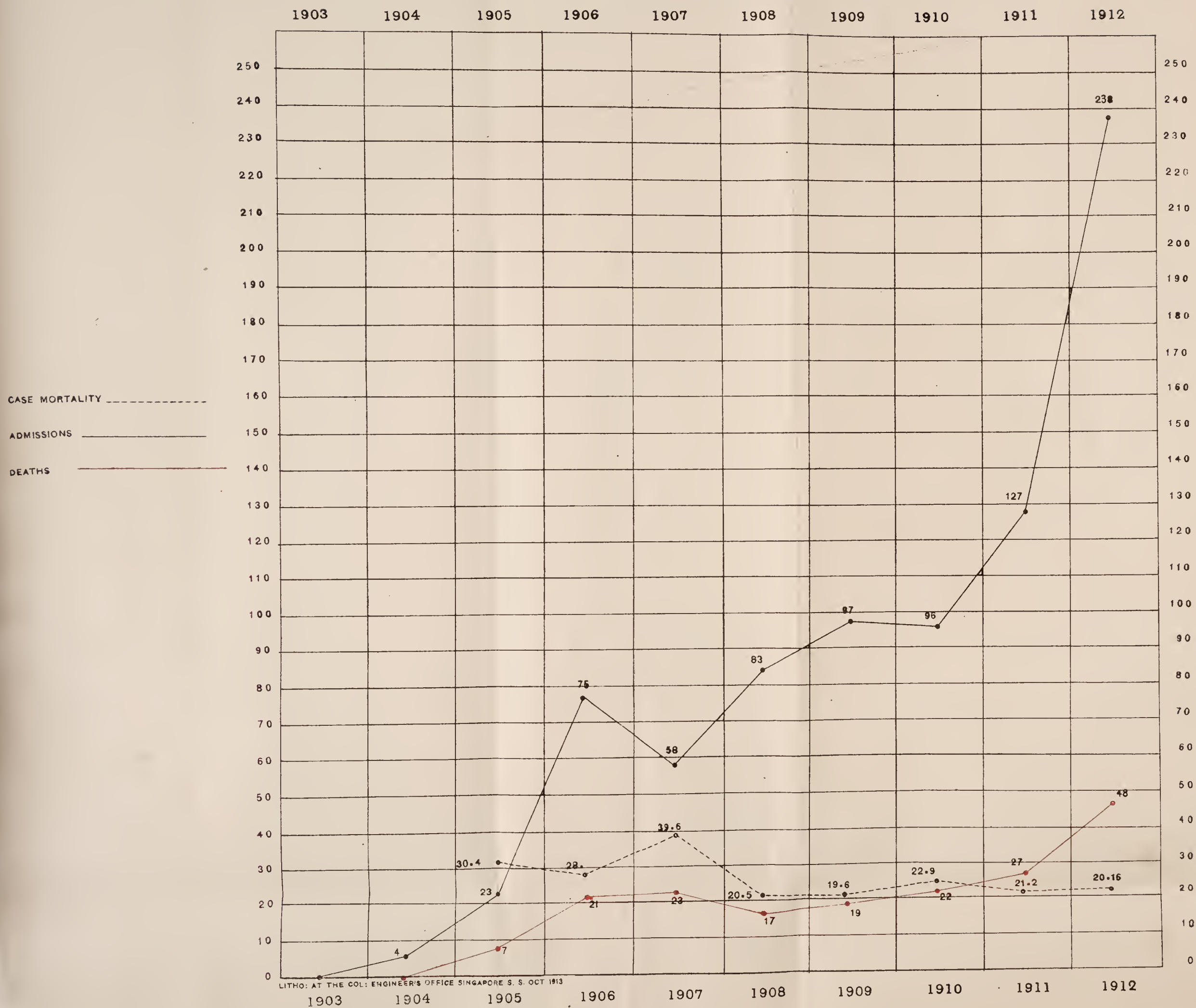
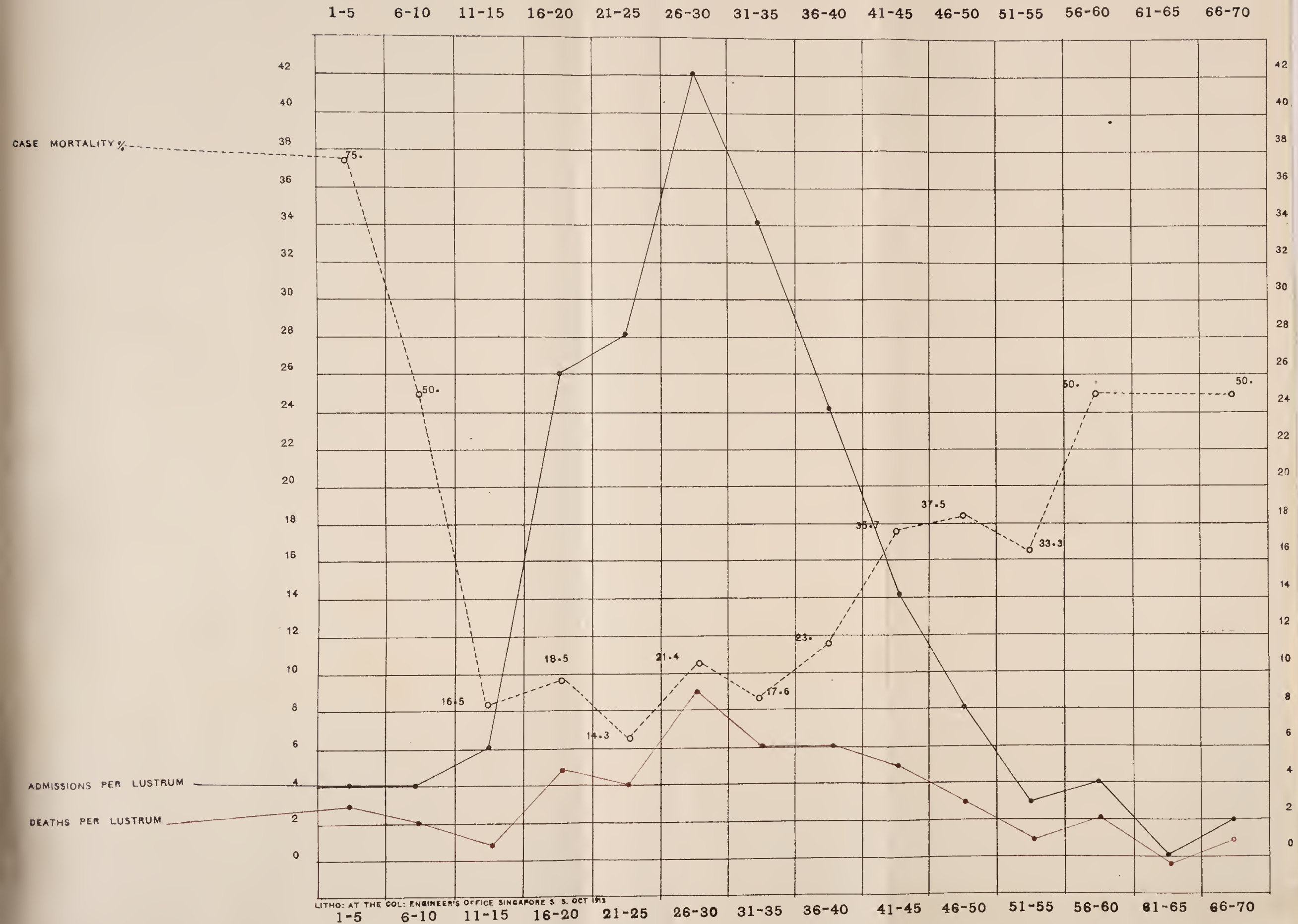




TABLE 2

ADMISSIONS FOR ANKYLOSTOMIASIS AND DEATHS THEREFROM AT VARIOUS AGES



Signs and Symptoms of the Disease.—The patients on admission complained of:—

Diarrhœa	...	...	...	in 97 instances.
Oedema of feet and legs	...	...	...	„ 77 „
Pain in abdomen	...	...	...	„ 43 „
Fever	...	...	...	„ 38 „
General Anasarca	...	...	...	„ 36 „
Puffiness of face	...	...	...	„ 25 „
Weakness	...	...	...	„ 24 „
Dyspnœa	...	...	...	„ 23 „
Pain in limbs	...	...	...	„ 16 „
Ascites	...	...	...	„ 10 „
Cough	...	...	...	„ 10 „
Itch	...	...	...	„ 10 „
Jaundice	...	...	...	„ 6 „

This list illustrates the type of the disease met with here: diarrhœa sometimes with blood and mucus in the stools; a variable but usually well-marked amount of dropsy; pain in the abdomen, frequently epigastric, and the history and possible persistence of slight fever. Pain in the joints takes a much lower place than in some New World accounts and Geophagy except in pregnant women has been unusual. The spleen was noted as palpable in 52 instances, and as not enlarged in 76. The urine was examined in only 20 cases, in 6 of these albuminuria was detected. Gross anæmia was noted in 124 instances. The blood was examined in 16 cases of the 38 who had complained of fever before admission, in one instance only was a malarial parasite (Subtertian) detected.

Treatment.—Our most successful drug has been Thymol, 60 grains once a week in two or three divided doses, preceded and succeeded by a saline preferably Sodium Sulphate. Beta Naphthol, Extr. of Male fern and the Egyptian White Mixture were also tried but have not seemed so satisfactory. Our patients were usually kept on milk for the day preceding the weekly dose and until they had taken the second saline purge.

Prophylaxis.—Till this year little or no attention has been paid to the problem of nightsoil disposal, which appears to be the cardinal factor in prophylaxis. Since the passage of the “Estate Labourers (Protection of Health) Ordinance 1911,” latrines of various types are being built on all estates. Provided they offer sufficient accommodation and are kept clean, they soon become popular with the Tamil coolie; but he will not use a filthy and overcrowded latrine such as is only too often run up by an economical manager. We are at present advocating the use of the shallow trench type as specified by Dr. DANE; its simplicity recommends it and on estates where it has been employed its popularity has noticeably reduced the amount of ground pollution around the coolie lines. It will be of interest to watch its effects if any on the health of the coolies.

For more successful treatment in the future, our coolie cases must be recognized at an earlier stage in the disease. This should be the work of the Estate Medical Officer, who should endeavour to lessen the number of the coolies dismissed for laziness and inefficiency by the discovery and the expulsion of what the Americans have called the “Microbe of the Lazy Disease.”

The conclusions I have come to during this brief analysis are:—

1. That Ankylostomiasis as a pauperizing disease is increasing rapidly in Province Wellesley.
2. That the higher and inland estates are the more severely infected.
3. That the worst consequences of the disease are found in the disabling of young men between 20 and 30.
4. That owing in some measure to the late recognition of the disease our treatment for the last six years has shown no improvement in the case mortality.

APPENDIX D.

Malacca.REPORT BY DR. A. H. KEUN, *Medical Officer.*

				\$	c.
Revenue	...	...	...	8,501	88
Expenditure	...	...	...	60,267	23

Birth-rate.—The total number of births registered in 1912 was 4,885 (males 2,499, females 2,386) showing an increase of 943 to 1911, when there were males 1,993, females 1,949. With an estimated population of 127,797 this shows a birth-rate of 38·22 per mille, compared with 31·77 per mille in 1911 and 45·04 per mille in 1910.

The population is comprised as follows:—

Europeans	...	...	...	...	313
Eurasians	...	...	...	...	1,585
Chinese	...	...	...	...	36,526
Malays	...	...	...	...	81,203
Indians	...	...	...	...	7,728
Others	...	...	...	...	442
Total					127,797

Table giving sexes of births of different nationalities:—

				Males.	Females.
Europeans	...	...	...	4	1
Eurasians	...	...	...	36	34
Chinese	...	...	...	400	387
Malays	...	...	...	1,961	1,846
Indians	...	...	...	37	49
Others	...	...	...	61	69
				2,499	2,386
Total				4,885	

Death-rate.—The number of deaths recorded in 1912 was 6,274 (males 4,166, females 2,108) as compared with 7,159 in 1911 and 5,188 in 1910. The death-rate for the year on the estimated population given above is 49·09 per mille in 1912, as contrasted with 57·69 per mille in 1911 and 52·45 in 1910.

Table giving sexes of deaths of different nationalities:—

				Males.	Females.
Europeans	...	...	...	1	1
Eurasians	...	...	...	35	35
Chinese	...	...	...	1,652	255
Malays	...	...	...	1,925	1,649
Indians	...	...	...	438	120
Others	...	...	...	115	48
				4,166	2,108
Total				6,274	

Public Health.—The general health of the Settlement shows an improvement on the last year and more work will be done when the Medical staff is increased as is hoped shortly to be the case. The Women's Mission under Drs. STALEY and WARREN are doing most excellent work among the poor natives of all nationalities both in town and up-country with their travelling dispensary.

As in the previous year, Malarial fever accounted for most of the bad health and deaths in the Settlement. The Hospital and Dispensary figures, viz., 2,389 cases, give a most inaccurate idea of the prevalence of the disease, as hundreds of cases never come for treatment and the free supply of quinine at all the Police Stations and in the Estates lead to slight fevers (undoubtedly Malaria) being rapidly cured. So serious is the malarial plague becoming that I devoted special attention to the problem of the eradication of Malaria. This for Malacca, which consists of a series of swamps and paddy fields, is almost hopeless, but still much can be done and with a view to this, I gave lectures in Malay on the prevention of Malaria to all the penghulus and sidangs at Malacca town, Jasin and Alor Gajah and also to all the Malay teachers at the Malay College, Malacca. Pamphlets in the Vernacular and in Romanized Malay were freely distributed at these lectures. I also lectured at the various English schools on the subject. At all my visits into the Malay kampongs (and these were made frequently especially in the vicinity of Malacca town) I hunted for larvæ in the wells, drains, jars, broken pots, etc., and drew the householders' attention to them. In Malacca town, the three Sanitary Inspectors were specially instructed to hunt for these breeding places and to see that all broken jars, tubs, tins, etc., were removed or destroyed. My frequent visits of inspection in the houses soon showed the good results, as now one seldom if ever finds such breeding places of mosquitoes in the grounds and houses, while formerly they were of common occurrence. Several wells were found to be crammed with larvæ and these were ordered to be closed. A census of splenic enlargement among school children showed the universal prevalence of this plague, no district can be said to be free while some are distinctly notorious. Free quinine distribution by the Police and by the penghulus and gurus of schools still continues and the Police are told while on their rounds in the kampongs to inquire for sick people and to advise them to apply at the station for quinine. All these have led to a decrease in the incidence of the disease, but a good deal more has yet to be done. In 1913, I intend to visit all the Vernacular schools in Malacca and to speak to the children in simple words about Malaria and the mosquito. In Jasin among Anti-Malarial precautions taken was the appointment (1) a Sanitary Inspector for Rural Board villages, while Bukit Asahan and Merlimau were made Rural Board villages, the former having a sweeper to attend to the scavenging of the place and so leading to the removal of empty tins, etc. The village earth drains were replaced by concrete ones. In the Municipality of Malacca the Sanitary Inspectors were instructed to pay particular attention to the removal or destruction of empty tins, pots, etc., various repairs were done to drains, drains were kept clean by frequent flushings and earth drains were cleaned and had their edges trimmed oftener. Orders were issued to close 8 wells and cesspits which were found to be ideal breeding places of mosquitoes. The back of Heeren Street, where the reclamation is taking place, had under the back rooms of the houses stagnant pools of water where larvæ in millions were found. This was filled in and levelled and the mosquito-breeding-places done away with.

Small-pox, which broke out so severely in 1910 and continued sporadically in 1911, ceased its ravages in March of this year. A few cases, viz., 42 in all were treated at the various camps, but chiefly at the Central District where there were 33 cases with 8 deaths. The districts infected were:—Tanjong Kling, Tangga Batu, Sungai Siput and its neighbourhood. At Alor Gajah there were 9 cases treated with 3 deaths. There were no cases in Jasin. Of the 33 cases of Small-pox treated in Mata Kuching Camp, 26 had marks of vaccination done only in childhood and 7 were unvaccinated. Of the 7 unvaccinated cases, all had severe attacks and 2 died. Of the 26 cases, 6 died, these cases varied in severity. At Alor Gajah 3 cases had been vaccinated within a month of admission into the camp (2 of the cases being contacts in the camp), 3 cases had been vaccinated in childhood, while 3 had no marks of vaccination at all. The last 3 had severe attacks and all died. A tenth case of Small-pox occurred in the district in a pregnant woman, who miscarried and died from exhaustion. This case was not treated in the camp. She had been vaccinated 7 months before her attack. There were 8 prosecutions for failing to report or delay in reporting the disease and the amount of \$110 was recovered from fines. I attach a table showing various incidence of sex, age, nationality and vaccination marks. As I remarked in my last year's report the unvaccinated cases showed a higher mortality and a severe type of disease. As in the previous year, vaccination

was pushed in all the districts and was kept up to the end of the year, the dressers and vaccinators going out on the streets into kampongs and in native lodging-houses vaccinating whom they could. The vaccination by gurus continued so long as the Small-pox lasted, afterwards they were unsuccessful in getting subjects. Being for the most part street vaccinations, the people operated upon could not afterwards be traced and this accounts for the large number of those returned as not seen.

The nationalities of those vaccinated were :—

					<i>Town.</i>	<i>Country.</i>
					—	—
European	...	...	...	...	1	...
Eurasians	...	...	...	...	36	...
Malays	...	...	...	...	791	5,772
Chinese	...	...	...	...	2,337	1,790
Indians	...	...	...	...	271	782
Others	...	...	...	...	5	18
					3,441	8,362
					11,803	

Vaccination done by Gurus :—

<i>Number vaccinated.</i>	<i>Perfect.</i>	<i>Modified.</i>	<i>Failed.</i>	<i>Not seen.</i>
—	—	—	—	—
2,272	1,486	299	423	64

Deducting the “modified” and “not seen” cases, the percentage of failure is 18·65.

Cholera.—I have to report two cases of Cholera in Malacca in October of this year. The cases were of great interest, as neither of them had been out of Malacca for some years. They were Railway coolies living in the Bachang Railway coolie lines at the 2nd mile stone. The first case occurred in the lines and was removed to the Quarantine Camp, while the second occurred in a contact in the camp (also from the same lines).

The water supply for the lines was obtained from a well within a few feet of the lines and from an iron cistern which caught the rain water from the roof of the coolie lines. Coolies drank both waters. Samples of the well water sent to the Government Analyst for analysis were at once condemned as being most dangerous to drink, being highly polluted. The well was at once closed and the iron cistern disinfected.

All contacts were removed to Hospital and the quarters were disinfected, white-washed, the earth floor scraped and tarred and all moveable articles destroyed. The results were satisfactory and no other cases arose.

Diagnosis was made on the presence of Comma bacilli in the stools and the post-mortem appearances so characteristic of Cholera.

Municipality.—The number of births within Municipal limits was 694 (males 360, females 334), as against 627 (males 319, females 308) in 1911.

The number of deaths was 1,126 (males 783, females 343), as against 1,223 (males 924, females 299) in 1911.

The infantile mortality was 259 in children under one year of age, giving a percentage mortality of 37·32 to the total births.

As Tetanus accounted for 47 deaths and this was due to the improper and filthy preparation and dressing of the cord, old knives, scissors and pieces of bamboo, etc., being used in cutting the cord which was afterwards dressed with ashes, earth and native powders and stray rags, etc., I gave several lectures to all the midwives within Municipal Limits (who were brought in by the penghulus) “on the care of the parturient woman and child” and showed them how to disinfect their hands and arms, scissors etc., and how to dress the cord. In addition the Municipality voted a supply of antiseptics, lint, cotton wool, etc., which could be obtained free of cost on application at the Dispensary by the native midwives. The experiment proved successful and the Tetanus incidence was at once lowered. It was interesting to note that cases of Tetanus or Puerperal Fever occurred often in the practice of certain midwives and

chiefly the older ones. Some of the younger midwives who strictly followed the instructions in their every-day practice soon had none or very few cases of Tetanus among the infants.

Convulsions was also another large factor in the infantile mortality and Mrs. SHORT, the Lady Inspector, who is doing excellent work among the natives, was instructed to bring all cases of Convulsions to the Dispensary where they were treated free of charge. This disease or group of symptoms is more amenable to treatment and hence this along with the great care taken in their nursing and feeding led to many recoveries. It was strange to see how many women lost each child born to them from Convulsions, which for the most part was due to injudicious dietary, rice and pap being given to infants of a few days or weeks' old. With the treatment given and the care of Mrs. SHORT, who personally visited these cases several times a day to superintend the preparation of the milk or white of egg mixture, they were able to carry their infants through the disease. The ages when Convulsions were at their worse among the infants, viz., from the 1st to the fourth month were those when native mothers from superstition, ignorance, hereditary customs or from poverty put their infants on pap soft rice and other farinaceous foods, one idea being that the solid food distended the stomach and soothed the child, but they did not realise that the subsequent fermentation of the rice, etc., led to dyspeptic discomforts and more crying, more rice being given to soothe the child's hunger to which they attribute the crying.

Durian Daun Hospital.

Buildings.—This year saw the various buildings in the Hospital whitewashed and tarred and many minor repairs executed. Ward V had a tile roof substituted for the attap one. The floor of the operation room was Minton tiled, while a new kitchen was erected on the site of the old one. In the Quarantine Camp, a small corrugated iron shed was put up for lepers and a bathroom made, while after the suppression of the Small-pox the various temporary attap sheds were destroyed.

Staff.—Assistant Surgeon WHEATLEY continued throughout the year and as usual did most excellent work. Assistant Surgeon DE CRUZ was transferred in June from the Durian Duan Hospital to Jasin, Mr. BASU from Penang succeeded him. Dressers R. M. NUNIS, GOMES and MOHAMED GHANI remained throughout the year in the Hospital. There were three resignations of dressers, viz., KIAT SWEE, TAN KANG HYE and SUNDARAM, who all left with the delusion they were bettering their prospects by joining estates as dressers. But that this was merely a delusion was shown by the fact that they all applied to be taken into the service again.

In October Dr. GRAHAM, Medical Officer (Malacca Rubber Plantations) was appointed Consulting Surgeon of the Durian Daun Hospital. This appointment was a distinct advantage to the Hospital, as Dr. GRAHAM has been specializing in Surgery for some years.

This year (in February) saw my scheme of training local dressers carried into execution. This arose from the idea of taking in Malay boys, who have passed the IV Standard and upwards at the various schools, and training them up with the view to encouraging them to spread the use of European medicine amongst their countrymen and women who up to recently had a distrust and dread of European treatment. When sufficiently trained their services could be utilized in Travelling Dispensary work, which it is hoped will be started shortly to carry European treatment and medicines to the very door of the natives reaching the far away kampongs where Malaria, Ankylostomiasis, Beri-beri and Phthisis are rife. In addition their services will be available for the various estates and hospitals, which at present are competing with each other for dressers and are paying extraordinary high salaries for men who for the most part are both inefficient and inexperienced. Six Malay lads and three others were taken on as apprentice dressers during the year. They receive a salary of \$10 a month and will be promoted dressers as vacancies occur. Of these lads three have received their promotions owing to resignations of other dressers. The keenness of these candidates for the Medical service was shown by their joining the hospital and working, in the case of some of them, for months without any salary (until the payment of a small salary was approved by Government). The establishment of the scheme has been of the greatest benefit to the Hospital as up to then we were working with a very small staff, viz., 6 dressers in a Hospital of 12 wards including an European ward in which were frequently cases requiring special treatment and care, and it was only the enthusiasm and continuous hard work of the men that allowed the hospital work to be so well done.

General Hospital.

European and Eurasian Wards:—

Remained on 31st December, 1911	...	...	...	Nil.
Admitted in 1912	...	...	...	90
Discharged	...	...	...	83
Died	...	...	...	4
Remaining 31st December, 1912	...	...	...	3
Average daily sick was	...	...	...	2.46

There were 25 Europeans treated as compared with 29 in 1911. There were no deaths.

Native Wards:—

Remained on 31st December, 1911	...	...	...	50
Admitted in 1912	...	...	...	642
Discharged	...	...	...	566
Transferred	...	...	...	10
Absconded	...	...	...	39
Died	...	...	...	55
Remaining 31st December, 1912	...	...	...	22
Average daily sick was	...	...	...	28.96

Percentage of deaths to total treated was 7.54 excluding the Quarantine Camp.

The chief Diseases treated were:—

Beri-beri	...	...	...	28 cases with 3 deaths.
Dysentery	...	...	...	37 " " 13 "
Gonorrhœa	...	...	...	17 " " ... "
Malaria (Malignant)	...	...	...	191 " " 9 "
Pneumonia	...	...	...	11 " " 1 "
Syphilis	...	...	...	9 " " ... "
Neuritis	...	...	...	22 " " ... "
Bronchitis	...	...	...	11 " " ... "
Phthisis	...	...	...	11 " " 1 "
Diarrhœa	...	...	...	29 " " 10 "
Ulcers	...	...	...	33 " " ... "
Injuries	...	...	...	93 " " 4 "
Ankylostomiasis	...	...	...	28 " " 7 "

Police.—The number of policemen treated was 152. There were no Europeans admitted.

Medico-legal work.—One hundred and sixty Police cases were attended to. 25 necropsies were held.

Quarantine Camp:—

Remained on 31st December, 1911	...	...	...	9
Admitted in 1912	...	...	...	26
Discharged	...	...	...	25
Died	...	...	...	10
Remaining 31st December, 1912	...	...	...	Nil.

Chief Diseases treated were:—

Small-pox	...	...	...	33 cases with 8 deaths.
Cholera	...	...	...	2 " " 2 "
Average daily sick was	...	...	...	.42

Pauper Hospital.

Remained on 31st December, 1911	...	...	299
Admitted in 1912	...	...	3,857
Discharged	...	...	3,273
Absconded	...	...	35
Died	...	...	583
Remaining 31st December, 1912	...	...	265
Average daily sick was	...	...	254·11
Percentage of deaths to total treated	...	...	14·02

The chief Diseases treated were:—

Beri-beri	...	...	573	cases with	63	deaths.
Dysentery	...	...	138	"	68	"
Gonorrhœa	...	...	69	"	...	"
Leprosy	...	...	6	"	1	"
Malaria	...	...	1,266	"	109	"
Phagedæna	...	...	25	"	16	"
Pneumonia	...	...	61	"	30	"
Rheumatism	...	...	61	"	...	"
Syphilis	...	...	127	"	7	"
Tuberculosis	...	...	6	"	4	"
Anæmia	...	...	79	"	15	"
Neuritis	...	...	29	"	...	"
Hemiplegia	...	...	14	"	3	"
Bronchitis	...	...	30	"	...	"
Phthisis	...	...	109	"	55	"
Diarrhœa	...	...	166	"	80	"
Cirrhosis Liver	...	...	27	"	16	"
Cellulitis	...	...	28	"	4	"
Abscesses	...	...	28	"	...	"
Ulcers	...	...	542	"	...	"
Wounds	...	...	14	"	...	"
Ankylostomiasis	...	...	277	"	62	"
Scabies	...	...	45	"	...	"

Number of operations performed—185.

Those of chief interest were:—

Radical cure for hernia	...	...	2
Amputation foot	...	...	2
" leg	...	...	5
" forearm	...	...	1
" toe	...	...	3
Uniting severed Tendo Achilles	...	...	1
Radical cure for Piles, (White-head)	...	...	1
Suprapubic Cystotomy	...	...	1
Elephantiasis Labiæ	...	...	1
Hydrocele (radical cure)	...	...	2
Plastic operation for Harelip	...	...	1
Arthrectomy	...	...	4
Entropion	...	...	2
Removal of tumours	...	...	3
Skin grafting (Thiersets)	...	...	6
Removal necrosed bone	...	...	4

Necropsies.—Twenty-five were performed.

Female Ward including Quarantine Camp:—

Remained on 31st December, 1911	...	...	14
Admitted in 1912	...	...	161
Discharged	...	...	150
Absconded	...	...	2
Died	...	...	14
Remaining on 31st December, 1912	...	...	9
Average daily sick was	...	...	9.09
Number of prostitutes treated	...	...	35

Chief Diseases treated were:—

Beri-beri	...	...	6 cases with	1	death.
Gonorrhœa	...	...	12	„	„
Malaria	...	...	30	„	1
Small-pox	...	...	6	„	3
S. Syphilis	...	...	6	„	...
Phagedæna	...	...	1	„	1
Anæmia	...	...	4	„	1
Diarrhœa	...	...	10	„	3
Phthisis	...	...	5	„	2
Chancroids	...	...	18	„	...
Ulcers	...	...	4	„	...
Ankylostomiasis	...	...	6	„	2

Malarial Fever as usual counted for the largest number of admissions, viz., 1,457 admissions with 118 deaths (a percentage mortality of 8.09), but of these a large number died within 24 hours of admission, almost before any treatment could be adopted. All cases admitted for fever or developing fever while under treatment for other diseases had their blood microscopically examined. The type of fever almost universally found was the malignant subtertian type and the use of quinine intramuscularly with large doses of Tinct. Warburg and Liq. Strychnine by mouth and small saline injections intravenously, subcutaneously, or per rectum were the means of saving many of the comatose and almost moribund cases.

Beri-beri accounted for 601 cases with 66 deaths. Here again many of the deaths took place within 24 hours of admission.

Dysentery and Diarrhœa had 370 cases with 171 deaths, a percentage mortality of 46.21. This would seem enormous were one not to take into consideration those dying within a few hours of admission and the very advanced stage of the disease of almost all admitted when native treatment outside had proved of no avail, too often the cases being brought in when dying either to save burial expenses or to keep the native lodging-houses to which such cases from the estates, etc., go, from having a bad name by deaths occurring in them.

Jasin Hospital.

Hospital Staff.—Mr. METHA was in charge up to June 26th, 1912, when he was relieved by Mr. DE CRUZ. Both officers have done good work in the Hospital.

Health of the Staff.—Mr. METHA suffered from frequent attacks of Malarial fever and was in consequence transferred to a healthier district (Balik Pulau, Penang). During the early part of the year many of the staff were affected with frequent attacks of Malaria but fortunately not of severe type. Owing to the prevalence for years past of severe Malaria amongst the staff and patients the question of the removal of Jasin Hospital to a new site was considered. There were many large and somewhat ineradicable anopheline breeding-places adjoining and the present buildings being old and dilapidated it was decided to build a new hospital on some high land on the Malacca side of the village and far removed from possible anopheline

breeding-places except a small ravine which will be drained. Work done. On December 31st, 1911, there were 78 cases in Hospital, 599 cases sought admission (men 566, women 33) making a total of 677 treated. There were 100 deaths giving a percentage mortality of 14.77 (or 9.42 per cent excluding those dying within 48 hours of admission). In 1911 there were 1,623 cases treated with 206 deaths giving a percentage mortality of 12.69.

The chief Diseases treated were :—

				<i>Cases. Deaths.</i>		
				—	—	
Malarial fever	...	...	...	261	30	(15 within 48 hours.)
Beri-beri	...	...	...	59	9	(8 within 48 hours.)
Ulcers	...	...	...	56	...	
Pneumonia	...	...	...	9	3	
Syphilis	...	...	...	12	2	
Ankylostomiasis	...	...	...	17	2	
Phthisis	...	...	...	12	8	
Dysentery	...	...	...	59	24	

In 1911 the chief Diseases treated were :—

				<i>Cases. Deaths.</i>		
				—	—	
Malarial fever	...	...	...	497	63	
Beri-beri	...	...	...	137	15	
Ulcers	...	...	...	169	...	
Pneumonia	...	...	...	6	1	
Syphilis	...	...	...	7	...	
Ankylostomiasis	...	...	...	15	3	
Phthisis	...	...	...	37	16	
Dysentery	...	...	...	138	59	

A few minor operations were performed during the year, viz., Incision of buboes, Abscesses and sinuses, etc., 21, Circumcision 2, Suppurative Peritonitis local 1, Removal Calculus Urethra 1, Enucleation glands groin 1, Scraping ulcers 16.

Parboil rice was supplied during the year.

The Infectious Diseases ward remained empty throughout the year—no cases having occurred in the district or in Hospital.

Post-mortem.—Thirty-seven post-mortem examinations were held—many being Coroner's cases.

Alor Gajah Dispensary.

Dresser NONIS was in charge during the whole of 1912.

Work done.—During the year the Dispensary and Dresser's quarters and out-houses and mortuary were re-attaped, while an attempt was made at draining the swamp in the Dispensary grounds by deepening the main drain and cutting side drains to open into it. As a result the swamp is now free from larvæ.

During the year 252 out-patients were treated, the receipts amounting to \$16.70. Of the different nationalities, the Malays were in predominance, viz., 168 (males 132, females 36), contrasting with 148 (males 126, females 22) of 1911. Natives of India came next with 44 cases. Chinese 32, Eurasians 6, Europeans 2.

The chief Diseases treated were:—

Malarial fever	...	...	...	...	69
Ulcer	...	...	...	...	58
Rheumatism (chronic)	...	...	...	...	28
Worms (Ascaridis)	...	...	...	...	25
Constipation	...	...	...	...	23
Bronchitis	...	...	...	...	12
Scabies	...	...	...	...	10
Diarrhoea	...	...	...	...	5
Dysentery	...	...	...	...	4
Beri-beri	...	...	...	...	3

Small-pox Camp.—On January 1st, 1912, 2 cases were under treatment, 7 were admitted during the year, making 9 cases in all. There were 3 deaths among them, all in persons who had never been vaccinated since childhood. Of the remaining 6 cases, 3 had been vaccinated within a fortnight of admission into the camp, and 3 bore old vaccination marks. A tenth case of Small-pox occurred in the district of Alor Gajah in a pregnant woman, who had been vaccinated 7 months before. She had an abortion which left her greatly weakened and this led to her death, although the attack was not a severe one.

Chicken-pox.—2 cases were treated in the camp.

There were no cases of Small-pox after March 21st.

Vaccinations.—This was pushed throughout the year, a dresser going out on the roads and in the kampongs for the purpose. There were 1,948 re-vaccinations done and 757 vaccinations (in children) making 2,705 in all.

Nationality:—

Chinese	...	...	...	...	689
Malays	...	...	...	...	1,475
Indians	...	...	...	...	541

Prison Hospital.

During the year there were 18 cases treated. Diarrhoea accounted for 4 admissions, Malarial fever 4, Conjunctivitis 3, Syphilis 2, Beri-beri 1, Dysentery 1, Gonorrhoea 1, Rheumatism 1 and Abscess 1.

Port Quarantine.—There has been no quarantine of steamers during the year.

Estate Hospitals.

Bukit Asahan Central Hospital.—This year showed no changes in the staff of the Hospital. Mr. MUKERJEE, Assistant Surgeon, continued in charge for the year. There are three Divisional Hospitals under Senior Dressers, one at *D*, one at *I* and the other at *B* Divisions (this last Hospital having been opened on August 3rd), where minor cases are treated—serious cases being sent to the Central Hospital.

Dr. GRAHAM continued as Medical Officer for the Malacca Rubber Plantations Estates, residing from 4 to 5 days a week at Bukit Asahan. There is a good supply of drugs and instruments at all these hospitals while the dietary is carefully attended to, meat, etc., being brought up from town for the patients. The wards and out-houses were all kept in a good state of repair. There is a distinct improvement in the health

of the coolies of this estate, the Tamil coolies who were the cause of the high mortality for last year had for the most part left the estate. In all 4,668 cases were treated with 234 deaths, a percentage mortality of 5·01 contrasting with 8,025 cases treated and 396 deaths of last year. Of the diseases treated Malarial fever and Cachexia had 2,496 treated with 84 deaths or 3·36 per cent.

Beri-beri	...	...	had 155 treated with 22 deaths or 14·19 per cent.
Pneumonia	...	89	21 23·59
Dysentery and Enteritis	...	604	68 11·25

Average number of coolies resident on the Bukit Asahan group of Estates is 4,500. Tamils 1,000, Javanese 600, Malays 400 and Chinese 2,500.

The water supply of the estate is by bricked and cemented wells with pumps attached. These wells are adjoining all the coolie lines.

Latrines are on the shallow trench principle.

Diamond Jubilee Estate Hospital.—Dr. RATTRAY has been appointed Visiting Medical Officer. An Assistant Surgeon has been engaged to devote his whole time to the hospital. Various repairs and alterations were done to the wards and out-houses. Owing to the prevalence of Gastro-Intestinal diseases and the high mortality from them on this estate the question of the water supply was entered into in 1911. The coolies were then in the habit of drinking water from a stream flowing through the centre of the estate. An order for the improvement of the water supply by having bricked and cemented wells was made and these have been constructed adjoining the coolie lines. An analysis of the waters of these wells gave satisfactory results. The directors are now considering a scheme for a central filter to filter the water of the estate which would then be carried in pipes to all the lines. The latrines are on the deep trench principle roofed in. The average labour force for the year was 1,253—Tamils 354, Javanese 65 and Chinese 834. In 1912 there were 887 cases treated with 85 deaths. Thirty-six of these deaths were due to Diarrhœa and Dysentery, which at one time raged in epidemic proportions on the estate and which has now fortunately abated. The percentage mortality was 9·58 and the daily average of sick 20·89.

The principal diseases treated were:—

Malarial fever	...	...	414 cases with 16 deaths.
Dysentery	...	97	27
Diarrhœa	...	80	9
Beri-beri	...	40	5
Debility	...	30	4
Anæmia	...	26	1
Bright's disease	...	8	3
Ankylostomiasis	...	7	2
Pneumonia	...	5	4

Jasin (Malacca) Rubber Estate Hospital.—This year the Manager erected a small hospital of 12 beds where cases of minor ailments were treated, serious ones being sent to the Government Hospital at Jasin. There were treated 177 cases with 4 deaths, the deaths being cases brought in a dying state into the hospital from the lines.

Malaria	...	accounted for 99 admissions with 2 deaths.
Dysentery	...	11
Diarrhœa	...	15
Anæmia, Ankylostomiasis and Abscesses for 4 admissions each with no deaths.		

Merlimau Estate Hospital.—A small hospital consisting of two wards (32 beds) was erected in 1912. This is under the charge of Dresser HOSIE, an old Government pensioner. Three hundred and sixteen cases were treated with 11 deaths.

The chief diseases treated were :—

Unclassified fevers	...	...	102 cases with no deaths.
Malaria	...	...	46 „ „ 6 „
Dysentery	...	...	37 „ „ 2 „
Diarrhœa	...	...	10 „ „ ... „
Ankylostomiasis	...	...	21 „ „ ... „
Pneumonia	...	...	4 „ „ 2 „
Infantile Convulsions	...	...	1 „ „ 1 „

Tebong Estate.—The estate has a Dresser in charge. It is visited by Dr. RATTRAY. During 1912, there were 248 cases treated with 11 deaths.

Chief diseases :—

Malarial fever	...	...	115 cases with 3 deaths.
Diarrhœa	...	...	11 „ „ 3 „
Beri-beri	...	...	12 „ „ 1 „
Erysipelas	...	...	1 „ „ 1 „
Pneumonia	...	...	2 „ „ 1 „

The water supply of the Estate is from bricked wells.

TABLE I.

Malacca.

Small-pox incidence.

Cases of small-pox in 1912	...	...	35	Total
Remaining on 31st December, 1911	...	...	11	46

Incidence :—

Sex	{ Male	24	46
			{ Female	...	...	22
Age	{ Children	7	46
			{ Adults between 18 and 40 years old	...	...	39
Nationality	{ Malays	40	46
			{ Chinese	...	...	5
			{ Tamils	...	...	1
With vaccination marks or doubtful				34	46
With no vaccination marks	...			...	...	12

Deaths—total 15, giving percentage of 32.61 to total cases.

With vaccination marks or doubtful	...	8	15 deaths.
With no vaccination marks	...	7	

Number of prosecutions 8 with fines amounting to \$110.

Medical Mission.

The Medical Mission under Drs. STALEY and WARREN, Lady Doctors, started in 1911 and has during the year done considerable work among all classes of the community but particularly among the poor natives. The dispensaries run by them are in Malacca Town (Banda Hilir and Tranquerah), Tangga Batu and Punggor, but besides these dispensaries whenever opportunity arises the Mission doctors go to other villages and kampongs attending on all who seek their services. They have been most successful among the Malay women, who as a rule have an instinctive dread of European medicines and doctors. By the medicines being carried to their doors and by the success attending treatment of old chronic diseases, etc., for which native treatment have proved of no avail, the Malays are coming to appreciate European methods of treatment.

Dr. STALEY has kindly submitted to me the statistics of their work for 1912.

Total dispensary patients treated	...	...	6,998
Of these Malays alone were	...	...	6,063
Chinese and Tamils	...	...	935

Operations.—Two hundred and fifty-six, of which 199 were among the Malays. The operations include Removal of Tumours, Cataracts, and Eye operations, Removal of Polypi and Cysts, Hæmorrhoids and Curettings, etc.

Total dressing of wounds and ulcers	923
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CLASSIFICATION OF DISEASES.

1912.		1911.	
Total cases 6,998 (Malays 6,063).		Total cases 5,818 (Malays 4,263).	
Malaria	... 1,091 or 15·5 per cent.	Malaria	... 719 or 12·3 per cent.
Gynæcological	759 or 10·8 „	Gynæcol.	... 717 or 12·3 „
Venereal	... 493 or 7·07 „	Venereal	... 325 or 5·5 „
Eye disease	... 408 or 5·8 „	Eye disease	... 283 or 4·8 „
Cataracts	... 134	Cataracts	... 73
Beri-beri	... 240 or 3·4 per cent.	Beri-beri	... 226 or 3·8 per cent.

Malaria easily stands first among the diseases and the large number shows its prevalence in the kampongs and out-of-the-way villages. The success attending the up-country dispensary work of Drs. STALEY and WARREN shows clearly the necessity for the work being extended by the Government and it is hoped that the several joint Estate Hospitals, shortly expected to be built in different districts of the Settlement, will bring the Western treatment of disease more home to the people.

APPENDIX E.

Singapore.

HOSPITALS FOR WOMEN.

Kandang Kerbau Hospital.

REPORT BY MR. C. V. NORRIS, *Assistant Surgeon.*

The following table shows admissions, etc., during the year:—

		<i>Remained.</i>	<i>Admitted.</i>	<i>Died.</i>	<i>Remaining.</i>
		—	—	—	—
Eurasian	...	7	29	1	10
Malay	...	2	29	9	4
Tamil	...	8	97	15	5
Chinese	...	40	228	38	46
Others	...	...	8	...	1
Japanese	...	6	83	4	10
Total	...	63	474	67	76

Of the above admissions 139 were prostitutes.

The admissions show an increase of 70 over those of the previous year.

The average daily sick was 76·2, against 66·74 in 1911.

The death-rate in 1912 was 11·49 per cent, in 1911 it was 19·55 per cent.

The chief admissions were from :—

Venereal affections	...	...	...	...	88 cases.
Malaria	...	...	...	...	55 „
Tuberculosis	...	...	...	...	26 „
Beri-beri	...	...	...	...	16 „
Fever unclassified	...	...	...	...	15 „
Dysentery	...	...	...	...	11 „

The following major operations were performed during the year :—

Removal of ovarian cyst	...	...	...	1
Amputation of leg	...	...	...	1
„ of forearm	...	...	...	1
Whiteheads operation for hæmorrhoids	...	...	...	1

All with successful results.

VENEREAL AFFECTIONS.

Gonorrhæa.—All the Japanese patients treated for this disease were suffering from Endometritis and Salpingitis the result of it.

Syphilis.—This disease occurred chiefly among Chinese who came to hospital in many cases as a last resource. Caries and Necrosis of bone were constantly present in this class of patient necessitating a prolonged stay, in some cases extending to over two years. Several of these patients after recovery and discharge relapsed within a short time and had to be re-admitted.

Neo Salvarsan was employed in selected cases with beneficial results; one case in particular which had resisted treatment by large doses of mercury for several months yielded to the drug, all ulcers healing within 15 days of its administration. In a second patient who had bone lesions and ulcers the latter healed rapidly, but the bone condition was not improved.

Malaria.—Most of the admissions were Tamils from Upper Tanglin, Bukit Timah, Seletar, and Tampenis.

Tuberculosis.—The cases admitted were chiefly Japanese and Chinese prostitutes; many were brought to hospital in absolutely the last stages of the disease.

Dysentery.—During the year there were 11 cases admitted with 5 deaths, 3 of whom died within 48 hours of admission.

Neuritis.—After confinement simulating Beri-beri in its symptoms is a common affection among natives. There were five admissions for this disease. A large number of cases of this disease were treated as out patients.

This institution is a poor house as well as a hospital which accounts for admissions for Senility, Hemiplegia, Dementia and Cataract.

Penang.

Native Female Ward, District Hospital.

REPORT BY DR. R. DANE, *Senior Medical Officer*.

In the latter half of the year the floor of this ward was cemented; the patients being temporarily lodged in the Native Female Ward, General Hospital.

2. There have been 278 admissions during the year as compared with 247 admissions in 1911. The number of deaths is again high, being 45, but as many of the patients are picked up by the police in a moribund condition this large number is not surprising. The chief cause of death was dysentery; the principal disease treated was Malaria Fever.

3. The majority of the patients were Tamils and Chinese; there being only 10 Malays treated throughout the year.

*Nationality return of the District Hospital, Females, Penang,
for the year 1912.*

Nationalities.	Remained.	Admitted.	Total.	Discharged.	Transferred.	Absconded.	Died.	Remaining.
Europeans ...	...	2	2	2	...	...	...	...
Eurasian ...	1	3	4	4	...	...	...	...
Japanese ...	...	2	2	2	...	...	...	...
Chinese ...	11	114	125	96	...	1	15	13
Malays ...	...	10	10	8	...	...	2	...
Tamils ...	8	143	151	124	...	1	26	...
Singhalese ...	...	2	2	1	...	...	1	...
Siamese ...	...	1	1	...	...	...	1	...
Bengali ...	...	1	1	1	...	...	...	...
Total ...	20	278	298	238	...	2	45	13

Venereal Wards.

REPORT BY Dr. R. DANE, *Senior Medical Officer.*

There have been fewer admissions in 1912, the total number being 197 as compared with 266 in 1911.

2. There have been 5 cases of Syphilis in the primary stage treated with salvarsan. All were girls between the ages of 22 and 30 and in all cases the lesion rapidly healed.

3. The majority of patients were Chinese, who formed 70 per cent of the total admissions.

4. The chief causes of death was Phthisis.

List of following Diseases showing Number of Cases and Number of Prostitutes affected at the Venereal Hospital, Penang, for 1912.

Diseases.	Number of Cases.	Number of Prostitutes.	Remarks.
Gonorrhœa ...	6	125	
Primary Syphilis ...	7		
Secondary Syphilis ...	14		
Chancroids ...	14		
Erosion Cervix ...	79		
Inflam. „ ...	7		
Ulcer Vulva ...	4		
„ Labia ...	1		
Gon. Rheumatism ...	2		
Total ...	134	125	

Female Leper Ward, Jelutong.

REPORT BY Dr. R. DANE, *Senior Medical Officer.**Buildings.*—No additions or alterations were made during the year.2. *Work done.*—There were 17 cases remaining at the beginning of the year—one case was admitted during the year, making a total treated of 18.

3. During the year there were two deaths; and one case was discharged at the request of her friends and taken to China, the usual precautions being taken at Penang and Singapore to ensure her departure from the Settlements.

Malacca.

The Women's Hospital is part of the Durian Daun Hospital and is under the same staff. Various minor repairs were executed in the wards and out-houses. The figures of admissions, etc., for the Female wards, General Hospital and Pauper, are as follows:—

General Hospital:—

Remained	...	...	...	...	4
Admitted	...	...	...	...	37
Discharged	...	...	...	...	39
Died	...	...	...	...	Nil.
Remaining	...	...	...	...	2

Principal diseases treated were:—

Dysentery	...	...	...	...	2
Malarial Fever Malig.	...	...	...	...	12
Ulcers	...	...	...	...	4
Chronic Diarrhoea	...	...	...	...	6
Ankylostomiasis	...	...	...	...	2
Injuries	...	...	...	...	3
Daily average number in ward	...	...	...	...	1'77

Quarantine Camp:—

Remained	...	...	...	...	6
Admitted	...	...	...	...	6
Discharged	...	...	...	...	9
Died	...	...	...	...	3
Remaining	...	...	...	...	Nil.

Principal diseases treated were:—

Small-pox	...	...	...	...	12	with 3 deaths.
Daily average number was	...	...	...	...	03	

Pauper Hospital:—

Remained	...	...	...	...	4
Admitted	...	...	...	...	118
Discharged	...	...	...	...	100
Absconded	...	...	...	...	2
Died	...	...	...	...	11
Remaining	...	...	...	...	9
Daily average number	...	...	...	...	7'26

Principal diseases treated:—

Beri-beri	...	...	...	6 with 1 death.
Gonorrhœa	...	...	...	12 „ ... „
Malarial Fever (malignant)	...	...	...	18 „ 1 „
Phagedæna	...	...	...	1 „ 1 „
Anæmia	...	...	...	4 „ 1 „
Diarrhœa	...	...	...	4 „ 3 „
Phthisis	...	...	...	5 „ 2 „
Ankylostomiasis	...	...	...	4 „ 2 „
Secondary Syphilis	...	...	...	6 „ ... „
Chancroids	...	...	...	18 „ ... „

Nationalities, General and Pauper Hospitals:—

Chinese	...	...	...	...	56
Tamils	...	...	...	...	86
Malays	...	...	...	...	15
Eurasians	...	...	...	...	16
Japanese	...	...	...	...	2

In Jasin there is a small Women's Ward, and here 36 cases were treated in 1912 with 4 deaths.

The nationalities of patients were:—

Malays	...	...	...	...	1
Javanese	...	...	...	...	4
Tamils	...	...	...	...	31
Others	...	...	...	...	Nil.

Chief diseases treated:—

Bright's disease	...	...	...	3 with 1 death.
Wounds	...	...	...	3 „ ... „
Malaria Malignant	...	...	...	7 „ 1 „
Gonorrhœa Arthritis	...	...	...	5 „ ... „
Dysentery	...	...	...	5 „ 2 „
Malaria Fever	...	...	...	2 „ ... „

APPENDIX F.

OUT-DOOR DISPENSARIES.

Singapore.

REPORT BY MR. J. V. PESTANA, L.R.C.P., L.A.H.

1. The number of patients treated during the year was 10,493 and the number of visits they paid was 37,334, giving a daily average attendance of 126.46, an increase of 215,479, and 18.48 respectively over 1911.

2. The fees collected amounted to \$3,234.55, as compared with \$3,029.60 for 1911.

3. The principal diseases seen were:—

Malaria	...	...	1,809 against 2,174 in 1911
Venereal Diseases	...	...	1,438 „ 1,252 „
Ulcers	...	...	1,786 „ 1,487 „
Bronchitis	...	...	609 „ 387 „
Injuries	...	...	380 „ 325 „

4. Since June last blood films from all cases of fever were examined for malarial parasites by Dr. FINLAYSON and 586 were returned as positive. Of this number 331 were of the subtertian type, 205 Benign Tertian, and 50 Quartan.

Two hundred and two or 35 per cent of the positive cases gave a history of having been infected previous to arrival in the Settlement, and the following are the places from whence they came:—Johore including Cucob and Pulo Tekong 117, neighbouring Dutch Islands 30, Selangor 18, Perak 16, Pahang 3, Kelantan 5, Negri Sembilan 5, Patani 1, Malacca 6 and India 12.

In 107 cases the residence in Singapore at the time of their first visit to this dispensary was less than one week, in 27 less than two weeks, in 15 cases less than 3 weeks, and in 53 cases less than one month.

The nationalities were Indians 379, Chinese 140, Malays 38, Arabs 6, Japanese 13, Eurasians 9 and Jews 1. The preponderance of Indian patients over the others may be accounted for by the fact that a large portion of them, have had malaria before arrival in the Colony.

5. Venereal Diseases show an increase of 186 cases. The majority of these were cases of Secondary Syphilis, who had not been properly treated in the primary stage of the disease. Patients with Primary Syphilis as a rule cease attending as soon as the chancre is healed, to return again when secondary symptoms develop. Even in the secondary stage they attend as long as there are active manifestations only, thus remaining infective for an indefinite period. Twenty-seven cases of inherited syphilis were treated during the year.

6. Ulcers show an increase of 299 cases. The greater number of these are the result of improper treatment of minor injuries. It is satisfactory, however, to notice that many of the cases come in for treatment in the early stages, and that minor injuries also show a slight increase.

7. Two hundred and twenty-five children below one year of age were treated during the year, of these 58 suffered from gastric and intestinal complaints arising out of faulty feeding. It is regrettable to observe the rapidly growing tendency to adopt bottle feeding among native mothers. Condensed milk or sometimes a cheap brand of skimmed milk is invariably given and in not a single case was a mother or an amah who accompanied the child able to state the proportion of milk to water used. Bottles of every description are seen frequently with rubber tubing 18 inches in length with a piece of bamboo attached to it inside the bottle. The commonest stopper is a reel of thread with one end shaved off.

8. During the latter half of the year some of the Municipal Midwives have voluntarily rendered me some help during their spare hours. They were of great assistance in the treatment of children and in inducing native women to submit to gynæcological examination when necessary. Two 5th year students from the Medical School are detailed for duty here.

9. Mr. CLARKE was transferred to Penang on the 14th of March, and I took over charge on the 8th of April, the interval having been filled by Mr. D'CRUZ of the Port Health Office and Mr. HALE of the Prison Hospital.

Penang.

1. *Chowrasta Dispensary*.—Appended is a table showing the work done during the past year.

2. The Dispensary was open for 312 days during the year; the daily average number of visits being 51.44 as against 53.72 in 1911.

3. This institution continues to be well appreciated by the poorer class of people.

The principal diseases treated were:—

Malaria	...	...	...	...	...	242
Pyrexia	...	...	...	...	...	1,054
Rheumatism	...	...	...	...	...	753
Syphilis	...	...	...	...	...	141
Bronchitis	...	...	...	...	...	473
Diarrhœa	...	...	...	...	...	107
Dyspepsia	...	...	...	...	...	290
Ulcers	...	...	...	...	...	1,123
Injuries	...	...	...	...	...	389

4. The nationalities of those treated are as follows :—

	1911.	1912.
Europeans	73	41
Eurasians	301	312
Chinese	2,709	2,692
Malays	1,792	1,552
Natives of India	2,674	2,735
Others	99	145
Total ...	<u>7,648</u>	<u>7,477</u>

5. Mr. Assistant Surgeon WESTERHOUT and Dresser STEPHEN continued to do duty throughout the year.

Comparative statement showing the number of patients at the Government Out-door Dispensary, Penang, from 1903 to 1912 :—

—	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Number of patients attended ...	4,909	5,826	6,504	7,046	6,876	7,179	7,693	8,328	7,648	7,477
„ of visits paid ...	9,709	11,860	11,259	11,427	11,990	14,362	15,004	16,535	16,762	16,051
Patients treated free ...	1,500	2,026	2,624	3,353	3,095	3,077	3,436	3,519	2,747	2,688
Indigent patients ..	160	252	218	278	196	319	616	558	756	782
Paying patients ...	3,249	3,548	3,662	3,415	3,585	3,783	3,641	4,251	4,145	4,007
Average visits per diem ...	32.69	39.53	38.16	38.44	40.50	46.93	48.4	52.99	53.72	51.44
Number of days dispensary open ...	297	300	295	298	296	306	310	312	312	312
Receipts for the year \$	752.05	795.10	840.56	768.26	866.90	972.15	921.60	1,047.45	1,003.20	973.80

Return of Government Out-door Dispensary, 1912.

Months.	Total Patients.	Total Visits.	Indigent Patients.	Paying Patients.	Police Force.	Government Servants.	Free Patients.	Receipts.
								\$ c.
January ...	645	1,426	61	363	92	118	11	94 80
February ...	580	1,163	54	338	78	101	9	79 30
March ...	638	1,315	50	331	130	117	10	78 75
April ...	626	1,297	69	324	110	114	9	76 10
May ...	717	1,141	81	353	144	127	12	85 10
June ...	657	1,414	60	341	138	110	8	89 45
July ...	602	1,083	41	329	137	81	14	72 30
August ...	499	1,087	55	261	105	69	9	61 70
September ...	485	1,103	65	288	41	70	21	70 55
October ...	640	1,470	76	368	34	144	18	88 95
November ...	705	1,714	89	350	41	199	26	84 30
December ...	683	1,838	81	361	26	193	22	92 50
Total ...	7,477	16,051	782	4,007	1,076	1,443	169	973 80

Balik Pulau.

6. During the year 413 patients sought treatment as out-door patients, this number being nearly double that of the preceding year which was 267. Of these 135 were Government servants, as compared with 42 the preceding year. The average number of visits per day was 2.25 as compared with 1.19, while the receipts for the year was \$54.75 as compared with \$30.15 in 1911.

The following table gives the statement of work done:—

			1911.	1912.
			—	—
Number of patients	...	...	267	413
„ „ visits	...	...	437	824
„ „ indigent patients	...	...	36	51
„ „ Government servants	...	...	42	135
„ „ paying patients	...	...	189	227
„ „ males	...	...	205	318
„ „ females	...	...	62	95
Average number of visits per diem	...	...	1.19	2.25
Receipts for the year	...	...	\$30.15	\$54.75

Nationality of those treated.

			1912.			1911.
			Males.	Females.	Total.	
1.	Europeans	... ..	4	5	9	Nil.
2.	Eurasians	... ..	13	3	16	3
3.	Chinese	... ..	157	71	228	171
4.	Malays	... ..	72	8	80	48
5.	Indians	... ..	72	7	79	44
6.	Others	... ..	...	1	1	1
TOTAL ...			318	95	413	267

Dindings.

The number of cases treated during the year was 586, against 693 in the previous year. 211 cases were mild Malarial Fever (518 cases from the District of Dindings and 68 from Sitiawan).

The receipts for the year amounted \$89.77.

Province Wellesley.

The total number of attendances at the Out-door Dispensary at Butterworth, Bukit Mertajam and Sungai Bakap was 4,613, against 4,643 in 1911.

Malacca.

Three thousand six hundred and forty patients were treated as contrasted with 3,645 the preceding year.

The total receipts for the year was \$478 as against \$648.95 in 1911.

Nationalities :—

				Males.	Females.
Europeans	...	...	...	95	38
Eurasians	...	...	...	782	645
Chinese	...	...	...	581	204
Malays	...	...	...	725	125
Natives of India	...	...	...	350	80
Others	...	...	...	1	14
				2,534	1,106
				3,640	

Chief Diseases treated :—

Pyrexia	...	...	...	...	452
Malarial Fever	...	...	...	...	387
Bronchitis	...	...	...	...	318
Ulcer	...	...	...	...	173
Rheumatism	...	...	...	...	184
Beri-beri	...	...	...	...	59
Dyspepsia	...	...	...	...	136
Anæmia	...	...	...	...	193
Neuritis	...	...	...	...	84
Diarrhœa	...	...	...	...	143
Dysentery	...	...	...	...	68

Jasin.

During the year 360 cases were treated as contrasted with 389 cases in 1911 the receipts amounting to \$36.65.

The chief diseases treated were Malarial Fever 121 cases, Constipation 15, Bronchitis 14, Ulcers 51, Syphilis 10, Beri-beri 7, Dysentery 6.

Nationalities.—Europeans 35, Eurasians 20, Chinese 100, Malays 104, Natives of India 95, Others 6.

Alor Gajah.

During the year 252 out-patients were treated, the receipts amounting to \$16.70. Of the different nationalities, the Malays were in predominance, viz., 168 (males 132, females 36), contrasting with 148 (males 126, females 22) of 1911. Natives of India came next with 44 cases, Chinese 32, Eurasians 6, Europeans 2.

The chief diseases treated were Malarial Fever 69, Ulcer 58, Rheumatism Chronic 28, Worms (Ascaridis) 25, Constipation 23, Bronchitis 12, Scabies 10, Diarrhœa 5, Dysentery 4, Beri-beri 3.

APPENDIX G.

VACCINATION.

Singapore.

1. The total vaccinations performed in Singapore during the year under report was 6,279 as against 5,391 in 1911.

2. The Public Vaccinator performed 2,303 vaccinations, the rest being done by licensed vaccinators and Private Medical Practitioners, viz., 3,976 as against 2,337 and 3,054 respectively.

3. The Private Medical Practitioners performed 381 vaccinations.

Settlement.	No. of Vaccinations performed.		Result.			
	By Govt.	By others.	Perfect.	Modified.	Failed.	Not seen.
Singapore	2,303	3,976	6,185	3	83	8
Penang	2,664	223	2,511	274	65	37
Dindings	135	...	65	19	20	31
Province Wellesley ...	4,462	...	3,716	290	432	24
Malacca	11,803	55	5,049	483	759	5,567
Labuan	459	...	314	...	122	23
Total	21,826	4,254	17,840	1,069	1,481	5,690
26,080.						

Penang.

1. The number of children and others collected by the Police for vaccination during the year 1912 in Penang was 2,664, and 96·17 per cent of these operations were successful. There were 223 successful vaccinations reported by private practitioners. Besides there were 157 re-vaccinations performed on school boys.

2. The sub-joined table shows the number vaccinated during the past five years and the number of births registered :—

YEAR.	Vaccinations in town and country districts.	Percentage of successful cases.	Total births registered.
1908	3,369	98·24	2,930
1909	3,020	97·25	2,706
1910	2,725	90·90	3,025
1911	2,453	88·46	3,371
1912	2,664	96·17	3,766

Dindings.

One hundred and thirty-five people were vaccinated during the year with 20 failures as compared with 435 with 7 failures in 1911.

Province Wellesley.

Annual return of vaccination of Province Wellesley for the year 1912. Number of cases vaccinated was 4,462 (2,082 males and 2,380 females).

Table showing Nationalities.

Result.	European.	Eurasians.	Chinese.	Malays.	Indians.	Others.	Total.
Perfect ...	1	6	724	2,496	451	38	3,716
Modified ...	...	1	53	184	51	1	290
Failed ...	...	...	101	263	67	1	432
Not seen ...	...	...	7	12	5	...	24
Total ...	1	7	885	2,955	574	40	4,462
Percentage of failures to total vaccinated ...	...	...	11.41	8.90	11.67	2.50	9.68

Percentage of Failures to Total Vaccinated.

Northern.	Central.	Southern.	For the three Districts.
7.77	11.45	11.30	9.68

Cost of each successful case of Vaccination.

Northern.	Central.	Southern.	Remarks.
20 cts.	37½ cts.	23¼ cts.	

Malacca.

Annual Return of Vaccination and Re-vaccination in the Division of Malacca, 1912.

Station.	Number Vaccinated.	RESULT.			Not seen.
		Perfect.	Modified.	Failed.	
Town	3,441	1,556	134	259	1,492
Country	6,090	1,966	47	66	4,011
Vaccination done by Gurus, Country	2,272	1,486	299	423	64
Total ...	11,803	5,008	480	748	5,567

Difference of Ages of those Vaccinated during the Year 1912.

Under one year.	From one to ten years.	From ten to twenty years.	Above twenty years.	Total.
3,124	1,475	1,650	5,554	11,803

*Number of Children and Others Vaccinated in Town and District
during the Year 1912.*

Nationality.	TOWN.		Nationality.	COUNTRY.		Grand Total.
	Number Vaccinated.	Total.		Number Vaccinated.	Total.	
Europeans ...	1	} 3,441	Europeans ...	Nil.	} 8,362	11,803
Eurasians ...	36		Eurasians ...	Nil.		
Chinese ...	2,337		Chinese ...	1,790		
Malays ...	791		Malays ...	5,772		
Indians ...	271		Indians ...	782		
Other Nations ...	5		Other Nations ...	18		

APPENDIX H.

QUARANTINE.

Singapore.

REPORT BY DR. A. MATHIESON, *Acting Port Health Officer.*

During the year, 1,927 visits were paid to ships in the harbour involving the examination of 130,349 crew and 409,328 passengers.

In order to avoid delay of ships carrying immigrants permission was granted to agents to keep quarantine hulks at the quarantine anchorage. To these hulks were transferred deck-passengers who on arrival were seemingly healthy but had not completed their quarantine period.

These hulks were under the supervision of this department and were visited every day by the Health Officer. Altogether 294 visits were paid.

The passengers of 314 ships were quarantined either on these hulks or on the quarantine station at St. John's Island for periods varying from 2-14 days. Of this number 67 had infectious disease on board at or before arrival in the port.

Twenty-six of these developed further cases during the period of quarantine.

Two hundred and thirty-eight had no disease on board but having come from an infected port all the deck-passengers had to be quarantined.

In ten of these cases the disease for which they were quarantined occurred.

Nine more infected ships arrived in the port whose passengers had been landed at Penang, thus bringing the total number of infected ships up to 76.

Of these infected ships 41 were infected with small-pox.

29	„	„	cholera.
5	„	„	plague.
1	„	„	cholera and small-pox.

The following is a list of ports from which infected ships arrived, with the number of infected ships from each port :—

Hongkong	...	...	...	...	17 infected ships.
Jeddah	...	...	...	...	14 „
Bangkok	...	...	...	...	11 „
Hoehow	...	...	...	...	6 „
Swatow	...	...	...	...	6 „
Madras	...	...	...	...	4 „
Amoy	...	...	...	...	2 „
Batavia	...	...	...	...	2 „
Bombay	...	...	...	...	2 „
Penang	...	...	...	...	2 „
Sourabaya	...	..	...	...	2 „
Bandjermassin	...	...	...	...	1 „
Calcutta	...	...	...	...	1 „
Dalny	...	...	...	...	1 „
Freemantle	...	...	...	...	1 „
Macassar	...	...	...	...	1 „
Sarawak	...	...	...	...	1 „
Samarang	...	...	...	...	1 „
Teluk Anson	...	..	...	...	1 „

Fifteen ships carrying pilgrims to Jeddah were inspected under the Pilgrims Ordinance and 6,559 pilgrims were examined for signs of infectious disease.

In the early part of the year pilgrims who had departed for Jeddah in 1911 returned. There were 15 ships which with one exception were infected with small-pox. One ship was infected with both cholera and small-pox. All pilgrims were landed on the quarantine station and detained there until they were successfully vaccinated or had completed the period of 14 days after the last case of small-pox. Of the pilgrims who left for Mecca in 1912, 2,800 have returned, there has been no case of infectious disease.

In July and August all passengers arriving from Kota Tinggi and Pengarang were examined in order to get a rough idea of how much disease was being imported into Singapore from that district of Johore. Altogether 4,048 persons were examined. Of these 1,123 had fever or enlarged spleen or both, while 898 had marked anæmia. There was one case of beri-beri.

Eighty deaths in sampan, tongkangs and ships in harbour were investigated. Forty-eight permits to bury ashore were granted, while 32 corpses were sent to St. John's Island for post-mortem and bacteriological examinations.

Thirty-eight permits to import, export or tranship coffins containing corpses were granted.

Two thousand one hundred and forty-five bills of health were issued during the year bringing a revenue of \$10,725. Pilgrims who had been quarantined here on returning from Mecca and who wished to proceed to Java ports were granted certificates stating the length of time they have been quarantined. By this means they were spared the trouble of quarantine on their arrival at Java. 897 of these certificates were granted. At first no fee was charged but now a fee of 25 cents has been imposed.

Thirty water-boats which supply water to the small shipping in the harbour, were inspected and certified clean and suitable for the purpose before licences were granted by the Registrar of Shipping.

The disinfecting launch *Hygeia* disinfected 252 ships and was used for transport purposes on 14 occasions.

A second disinfecting launch is to be provided next year.

Five thousand five hundred and ninety-four passes to passengers undertaking to report for medical inspection as required were issued to cabin passengers. This involves a great deal of clerical work which has to be done by the Health Officer after he has finished his inspection of the ship. Much delay is thereby caused and mail boats are often detained $\frac{3}{4}$ or 1 hour longer than necessary. In future the delay will be avoided as a clerk and interpreter is to be provided next year who will do this while the Health Officer is inspecting the ship.

Ninety-five bonds of security (\$500) for deck passengers fulfilling undertakings were issued.

As Deputy Health Officer for the island of Singapore outside Municipal limits 22 visits were made on account of infectious disease and other sanitary matters.

11	visits were on account of	... small-pox.
5	" "	... cholera.
3	" "	... plague.
3	" "	... other sanitary matters.

All cases of infectious disease were removed to the Quarantine camp at Tan Tock Seng's Hospital while all the contacts with their personal luggage were removed to St. John's Island.

The control of sanitation and infectious disease in Government quarters is also under the charge of this department. In this connection 7 visits were paid to Government buildings.

4	visits were on account of	... small-pox.
1	" "	... cholera.
1	" "	... leprosy.
1	" "	... nuisance.

Among the duties of the department is the treatment of the sick staff and Marine Post Office and Veterinary Department.

A dispensary has been fitted up where medicines are dispensed in order to avoid the long journey to the Government Dispensary.

Quarantine Station.

The number of passengers landed on the Quarantine Station, St. John's Island, was 56,726, the largest number since the station was opened.

It must be borne in mind that these numbers are not distributed evenly throughout the year.

One week the camp may be full and two weeks later may be almost empty.

At any moment without warning one or two thousand passengers may be landed. These have all to be carefully examined and counted. All their baggages and clothing has to be disinfected, their baggage numbered and stored and the passengers distributed to the various camps. It is therefore by the incessant vigilance and energy of the Medical Officer in charge that the work can go on smoothly and hopeless confusion be prevented.

The greatest number admitted on any one day was 2,457.

The maximum number in residence in one day was 4,329.

The smallest number in residence in one day was 14.

The total number of sick treated in hospital was 1,148.

The maximum number in hospital in any one day was 101.

There were 248 deaths giving a death-rate of 21.6 per cent.

One hundred and eighty-seven cases of cholera were under treatment with a death-rate of 66.8 per cent.

A large number of these cases were moribund on admission to hospital. There is a tendency to conceal cases among contacts so that many cases which could have come under treatment at an early stage were not discovered till the patient was in a state of collapse and consequently his chances of recovery were greatly impaired. Thirty cases had intravenous injections of hypertonic saline solution with a death-rate of 73.3 per cent. Only the very worst cases were so treated which accounts for the high death-rate in this series.

One hundred and thirty cases of small-pox were treated to a termination. There were 26 deaths giving a death-rate of 20 per cent.

There were four cases of plague—all pneumonic and all died.

The number of vaccinations performed was 14,947. On one ship no less than 11 cases of small-pox occurred—7 of these had been vaccinated in infancy and all had mild, discrete small-pox. Four of them had not been vaccinated. All four were confluent cases and three died.

By arrangement with the Municipality all infectious disease contacts are sent to St. John's Island for quarantine.

This year there were 157 small-pox contacts and 185 cholera contacts.

One cholera contact developed cholera.

There were 137 Government contacts. 32 were small-pox contacts (one of whom developed small-pox) and 105 were cholera contacts.

An outbreak of cholera having occurred at the Lunatic Asylum, Pasir Panjang, it was thought advisable to send all the contacts to St. John's Island. No further cases arose after they had been removed thither.

The distilling plant unfortunately broke down on the 23rd December, 1911, and was not in working order till 9th September, 1912. During that period water had to be obtained from Singapore.

Staff.—Dr. BROOKE had charge of the department until November 3rd when he went on leave. The following officers acted as Assistant Port Health Officer:—

Dr. MATHIESON.	|	Dr. SAYERS.
„ LOMAS.	|	„ SMART.

Dr. FURNIVAL was Resident Medical Officer at St. John's Island till the end of May.

He was succeeded by Dr. SMART who has been in charge since that time with the exception of six weeks during which period Assistant Surgeon DE CRUZ acted.

An European nurse is now stationed on the island.

Mr. W. A. DE CRUZ has been the Assistant Surgeon during the year and has carried out his duties in an intelligent and capable manner.

QUARANTINE.

Penang.

REPORT BY DR. F. R. SAYERS, *Port Health Officer.*

1. During the year 634 vessels were boarded and 64,757 crew units and 222,616 passengers and coolies were inspected.

2. Under the Pilgrim Ships Ordinance 11 vessels were inspected and cleared for Jeddah having on board 2,398 pilgrims embarked at Penang.

Thirteen ships carrying returning pilgrims were boarded and 13,010 pilgrims inspected. Of these 13 ships 9 were infected with small-pox and from them 3,260 pilgrims were quarantined at the New Quarantine Station, Pulau Jerejak.

3. A disinfecting launch is to be supplied next year for use of the port.

4. *Small-pox.*—There were 27 cases sent to Pulau Jerejak. They were imported from:—

Jeddah	...	...	...	...	...	25
Negapatam	...	...	...	...	...	1
Bombay	...	...	...	...	...	1

5. *Plague.*—No cases of plague were found on ships inspected.

6. *Cholera.*—Three cases of cholera were quarantined from s.s. *Taroba* on October 3rd. They came from Negapatam.

7. During the year there were five occupants of the post of Port Health Officer, Penang:—

Dr. FORD from 1st January to 15th March, 1912.

Dr. MATHIESON from 16th March to 13th May, 1912.

Dr. LOMAS from 14th May to 2nd July, 1912.

Dr. SAYERS from 3rd July to 6th September, 1912.

Dr. SMART from 7th September to 19th October, 1912.

Dr. SAYERS from 20th October.

The writer commenced his duties on July 3rd, 1912. He was attached to the Port Health Office, Singapore, for 6 weeks during September and October to study the routine there.

8. Permits to bury corpses from steamers and tongkangs were issued after investigation in 14 cases.

9. Statement *A* shows the number of vessels, crew units and passengers inspected in each month.

Statement *B* shows the number of vessels arriving each month from the various ports which were subject to quarantine restrictions.

Pulau Jerejak.

New Quarantine Station.

1. The old Quarantine Station was only used up to March 26th, 1912, the new Quarantine Station proving equal to the demands on its accommodation from that date.

2. The total number of passengers detained for observation throughout the year was 55,493 landed from 288 vessels.

Of this number 33,332 were Indian immigrants and 3,260 pilgrims.

3. The following diseases were treated:—

				Cases.	Deaths.
				—	—
Small-pox	...	...	...	75	8
Cholera	...	...	...	4	2
Plague	...	...	...	4	4
Chicken-pox	...	...	...	30	0
Measles	...	...	...	7	0
Other diseases	...	...	...	1,632	47
				—	—
		Total	...	1,752	61
				—	—

Percentage of deaths to cases treated 3.48

4. Thirty-eight thousand two hundred and ninety-seven vaccinations (including re-vaccinations) were performed in 1912.

This work is now being done by the Dressers of the new Quarantine Station and it is hoped that better results will be obtained thereby.

A new system recording certain facts is now in use which should give interesting results.

5. *Small-pox*.—On the 1st of January, 1912, there were 43 cases remaining under treatment. During the year exclusive of 25 cases and 7 deaths at the old Quarantine Station, 32 cases were admitted into hospital at the new Quarantine Station, Pulau Jerejak, making a total of 75 cases treated in 1912. Of these 8 died.

The 32 cases came from:—

Jeddah	...	...	...	...	27
Negapatam	...	...	...	...	1
Bombay	...	...	...	...	1
Developed at new Quarantine Station	...	...	...	...	3
					—
		Total	...		32
					—

6. *Plague*.—On the 28th of November 297 coolies were landed for vaccination from s.s. *Tara*. The ship was found on inspection to be "clean."

On the 3rd of December one of the coolies showed symptoms pointing to plague. Death took place on the following day and the post-mortem confirmed the diagnosis of septicæmic plague. Two more coolies died from the same form of plague on the 5th and 6th of December and another death occurred on the 7th December from bubonic plague. Three other deaths took place in this group of coolies—2 from malaria and one from dysentery. There were no symptoms of plague exhibited in these three cases and post-mortem examination of two of them confirmed this fact.

The remaining 290 coolies were inoculated subcutaneously with "Haffkines Plague Prophylactic."

Only one coolie showed a rise of temperature as a result and there were no complaints of nor objections to the procedure adopted and no further cases of plague occurred afterwards. The immediate contacts of the plague cases were isolated in hospital till the 24th December when they were discharged. The rest of the coolies left on the 19th December.

A searching examination for any possible cause was made at the station, but none could be discovered.

Disinfection of the coolies, their clothes, and the camps occupied by them was rigidly carried out.

7. *Cholera*.—Three cases were quarantined from s.s. *Taroba* on October 3rd when she arrived in Penang from Madras and Negapatam. One case developed in the contacts landed on the island.

Two of these three cases proved fatal.

8. A Jewel Pressure Filter was installed at the new Quarantine Station in 1912 and has been in use since the 1st of December. It works satisfactorily giving an ample supply of water which bacteriological and chemical analysis has shown to be excellent for human consumption.

9. Mr. Assistant Surgeon CLARKE, on March 3rd, 1912, replaced Mr. PESTANA as Resident Assistant Surgeon of the station.

10. Attached are statements showing the daily averages at the Station (C); the work done at the Station (D); a condensed résumé of 12 years' work (E); and the rainfall at the Station (F).

STATEMENT A.

(SHOWING INSPECTIONS IN EACH MONTH OF THE YEAR.)

MONTHS.			No. of Vessels.	No. of Crews.	No. of Passengers.
January	...	...	27	2,992	16,458
February	...	...	32	3,945	11,685
March	...	...	51	5,937	12,730
April	...	...	49	4,487	13,020
May	...	...	79	6,747	19,240
June	...	...	56	4,689	20,518
July	...	...	60	8,370	22,243
August	...	...	70	8,674	20,520
September	...	...	61	4,319	25,056
October	...	...	63	5,541	21,365
November	...	...	50	5,550	25,311
December	...	...	36	3,506	14,470
Total			634	64,757	222,616

STATEMENT B.

(SHOWING NUMBER OF VESSELS ARRIVING FROM EACH INFECTED PORT AND
SUBJECT TO QUARANTINE RESTRICTIONS.)

PORTS.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.
<i>India :—</i>													
Bombay ...	...	...	1	6	5	6	4	...	...	...	...	...	22
Calcutta ...	6	6	7	9	7	11	11	13	12	15	13	10	120
Madras ...	4	5	4	4	8	6	6	6	4	5	4	4	60
Moulmein ...	...	...	...	...	...	...	...	3	1	2	8	...	14
Negapatam ...	4	5	4	4	8	6	6	6	4	5	4	4	60
Nicobar Islands ...	...	...	...	...	...	1	...	...	...	...	1	...	2
<i>Arabia :—</i>													
Port Said ...	...	1	...	...	...	...	...	...	...	...	...	...	1
Jeddah ...	5	2	1	1	...	...	...	...	...	...	...	3	12
<i>China :—</i>													
Amoy ...	5	7	5	6	7	6	6	5	5	4	4	4	64
Swatow ...	5	7	5	6	7	6	6	5	5	4	4	4	64
Hongkong ...	7	6	6	7	10	15	14	28	12	6	7	8	126
<i>Java :—</i>													
Batavia ...	...	...	...	...	...	...	...	...	2	5	1	3	11
Tanjong Priok ...	...	...	...	...	...	...	...	...	...	...	...	1	1
Samarang ...	...	...	...	...	...	...	...	...	...	...	1	...	1
Sourabaya ...	...	...	...	...	...	...	...	...	1	...	1	...	2
<i>Straits Settlements :—</i>													
Singapore ...	12	13	12	15	16	22	24	24	11	15	11	13	188
<i>Siam West Coast :—</i>													
Tongkah ...	...	...	...	...	2	...	...	...	2	...	...	...	4
Trang ...	...	...	...	1	9	2	2	...	7	3	...	...	24
Ghirbee ...	...	...	...	...	...	...	...	...	2	5	8	...	15
<i>Perak :—</i>													
Teluk Anson ...	...	...	...	...	...	...	...	...	...	...	1	...	1
Bagan Datoh ...	...	...	...	...	...	...	...	...	1	...	...	...	1
<i>Sumatra :—</i>													
Deli ...	...	...	...	...	...	...	...	...	...	...	1	...	1
	48	52	45	59	79	81	79	90	69	69	69	54	794

STATEMENT C.

DAILY AVERAGES AT NEW QUARANTINE STATION, PULAU JEREJAK, IN 1912.

January	...	...	...	...	1,483
February	...	...	...	...	960
March	...	...	...	...	810
April	...	...	...	...	884
May	...	...	...	...	903
June	...	...	...	...	1,357
July	...	...	...	...	1,612
August	...	...	...	...	1,266
September	...	...	...	...	1,575
October	...	...	...	...	1,628
November	...	...	...	...	622
December	...	...	...	...	569

STATEMENT D.

(SHOWING THE WORK DONE AT NEW QUARANTINE STATION, PULAU JEREJAK, IN EACH MONTH OF THE YEAR).

—	Jan.	Feb.	Mar.	Apl.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Vessels ...	18	21	34	29	27	24	25	27	29	25	20	9
Passengers and coolies (admitted) ...	4,235	3,162	3,426	4,238	5,144	5,490	7,639	7,471	6,014	4,818	2,330	1,526
Daily average ...	1,483	960	810	884	903	1,357	1,612	1,266	1,575	1,628	622	569
Small-pox admitted.	13	11	1	1	...	...	...	...	...	1	...	...
Small-pox fresh cases	5	...	...	...	...	...	...	...	...	...	...	...
Cholera admitted ...	...	...	...	...	...	...	...	...	...	3	...	...
Cholera fresh cases ...	...	...	...	...	...	1	...	...	...	...	...	...
Plague admitted ...	...	...	...	...	...	...	...	...	...	...	...	...
Plague fresh cases ...	...	...	...	...	...	...	...	...	...	...	...	4
Chicken-pox ...	...	6	9	3	2	2	3	...	...	1	4	...
Measles ...	4	...	...	...	1	...	1	1	...	...	...	...
Deaths, Small-pox ...	7	...	1	...	...	...	...	...	...	...	...	...
„ Cholera ...	...	...	...	...	...	1	...	...	...	1	...	...
„ Plague ...	...	...	...	...	...	...	...	...	...	...	...	4
Vaccinations ...	3,059	2,443	2,080	2,205	3,586	4,099	5,931	3,410	5,249	2,919	1,840	1,476

STATEMENT E.

Condensed résumé of Twelve Years' Work—Harbour and Quarantine.

—			Vessels.	Units of crew and passengers inspected.	Passengers landed on Quarantine Station.	Small-pox treated.	Cholera treated.	Plague treated.	Mean daily average Quarantine Station.	Vaccinations.
1901	...	...	1,309	200,186	2,188	3	3	1	...	...
1902	...	...	1,000	180,632	5,755	5	42	...	...	...
1903	...	...	957	180,251	1,688	9	22	1	...	...
1904	...	...	748	184,691	2,217	16	5	2	...	...
1905	...	...	869	214,136	10,406	10	1	...	171	...
1906	...	...	675	204,988	23,288	16	8	2	461	6,490
1907	...	...	633	219,839	17,650	4	24	1	116	5,652
1908	...	...	1,205	176,119	21,175	51	9	2	366	5,691
1909	...	...	503	161,971	23,058	25	2	1	359	5,614
1910	...	...	526	217,967	71,876	62	33	2	1,584	12,205
1911	...	...	1,144	277,151	134,957	109	387	1	3,740	63,988
1912	...	...	634	287,373	55,493	75	4	4	1,111	38,297

STATEMENT F.

RAINFALL—NEW QUARANTINE STATION, PULAU JEREJAK.

1912.	Amount.		No. of rainy days.	
—	—	—	—	—
January	1.53	4
February	1.38	8
March	3.67	11
April	6.52	9
May	7.33	9
June	5.48	5
July	2.83	3
August	7.54	7
September	11.76	12
October	8.48	14
November	7.68	7
December	2.32	5
			66.52	94

The greatest rainfall in one day—2.50 on 15th August, 1912.

APPENDIX I.

Government Analyst's Department, Singapore.

REPORT BY DR. FRANKLAND DENT, M. Sc., Ph. D., F. I. C., *Government Analyst, S. S.*

The following table shows the revenue and expenditure for the year 1912, for comparison the revenue for the preceding year is inserted:—

Revenue.	1911.	1912.	Expenditure 1912.	—
<i>Fees of Office.</i>	\$ c.	\$ c.		\$ c.
Petroleum Inspection ...	4,830 00	4,645 00	Personal Emoluments	12,227 68
Miscellaneous ...	8,165 00	7,222 50	Chemical Stores from	
			England ...	532 40
			Miscellaneous ...	504 88
Total ...	12,995 00	11,867 50	Transport, Travelling & Personal Allowances	260 58
By Sales of Pyridine ...	210 00	395 00	Total ...	13,525 54

Owing to the absence of the Assistant Analyst in Penang during seven months of the year, there remained only myself and the Second Assistant Analyst, a considerable portion of whose time is spent in inspection duties outside the Laboratory, to do all the work of the Department. I had consequently to refuse a considerable amount of unofficial work, such as assays of minerals, analyses of soils, water, etc., especially from firms stationed outside the Colony. This branch of work, which is tending to increase at a rapid rate, and which, besides being of great assistance to those engaged in commercial undertakings, goes far in defraying the expenses of the Department, can of course only be accepted when purely Government work allows the time necessary for carrying it out.

Petroleum.

(a) *Kerosine*.—The following statement gives a comparison between the quantities tested on importation during the years 1911 and 1912:—

Description of Oil.		1911.			1912.		
		Number of Consignments.	Tins.	Tons.	Number of Consignments.	Tins.	Tons.
<i>Case Oil.</i>							
American Oil	Devoes ...	6	149,222	...	5	107,000	...
	Sylvan ...						
	Arrow ...	6	225,622	...	9	335,136	...
Langkat Oil	Cross ...	15	12,300	...	17	16,616	...
	Crown ...	71	227,753	...	65	245,981	...
	Dragon ...	28	264,581	...	34	214,094	...
	Rising Sun... ..	24	33,658	...	25	20,300	...
	Lamp Glass..	8	6,190	...	11	7,250	...
	Fish ...	20	23,080	...	19	13,744	...
Borneo Oil	Sumatra ...	4	860	...	1	500	...
	...	...	...	...	11	1,950	...
<i>Bulk Oil.</i>							
Pulau Samboe ...		18	...	615	33	...	1,310·1
Pulau Bukom ...		...	...	...	1	...	39·7
Total ...		200	943,266	615	231	962,571	1,349·8

In no case was petroleum, not previously declared to be dangerous, found to flash below the local standard.

Sixty-one cargoes were tested and certificates issued for petroleum consigned to Sarawak, Hongkong, Colombo, Sibul, Mire and Sepang in order to avoid delay at these and intermediate ports.

Ten samples were sent for special tests.

Investigations were carried out on the fractionation of various brands of local oil and also on lighthouse oil for the Marine Department.

(b) *Dangerous Petroleum*.—One hundred and twelve consignments were imported during the year. The receptacles were in all cases examined as to whether they fulfilled the conditions laid down in the Rules and By-laws under the Petroleum Ordinance.

(c) *Mineral Turpene*.—One consignment of 9,750 gallons was imported and found to flash at 91° Fahr.

(d) *Liquid Fuel*.—Thirteen consignments of 26,207·46 tons were tested on importation.

Two samples were submitted to the Admiralty tests for oil fuel.

(e) *Filter Press Oil*.—One consignment of 1,483 tons was tested on importation.

(f) *Tank Testing*.—Seventeen vessels which had carried petroleum were tested in the Dangerous Petroleum Anchorage for inflammable vapour by means of Redwood's Standard Instrument under Rule 23 of the Petroleum Ordinance.

(g) *Lubricating Oil*.—Six samples were tested for damage by sea-water.

Explosives.

Thirteen consignments of explosives comprising 3,670 cases of gelignite, 870 cases of dynamite and 740 cases of blasting gelatine were tested on importation into Singapore in accordance with the Rules under "The Explosives Ordinance 1899."

All passed the prescribed tests.

Two samples of explosives, said to have been ten years old, and one sample of "sand crackers" were reported upon.

Counterfeit Coins.

(a) *Britannia Metal*.—Seven sets of exhibits in connection with the making or uttering of counterfeit coin were examined during the year.

The total number of coins was 97, as compared with 1,098 in 1911 and 216 in 1910. Of these coins, 11 were dollars, 12 fifty-cent pieces, 49 twenty-cent pieces and 25 ten-cent pieces.

In three cases, full sets of coining apparatus were submitted for examination, and in one case counterfeit guilders were also found.

(b) *Silver*.—Only one case occurred during the year in which the counterfeit coins were made of silver.

Thirteen dollars were seized in this case.

Forged Currency Notes.

A very large number of exhibits connected with a case, in which two Europeans were implicated, were sent in for examination and report. These included chemicals, apparatus, forged impressions of \$1, \$5 and \$10 currency notes in various stages of manufacture, memoranda giving lists of chemicals (most of them, however, useless for forging purposes) etc., etc.

After many attempts passably good copies of genuine notes of the above denominations were produced in the Laboratory from the exhibits received.

In a further case, a number of forged notes, made by ordinary printing methods, were brought to the Laboratory. These proved to be very bad imitations and were obviously forged.

The only safe method, however, for distinguishing good Straits currency notes from bad ones is to look for the water-mark. This, under ordinary conditions, is not easily seen in the genuine red \$1 notes, but become at once visible after moistening the notes with water.

Minerals, etc.

One hundred and forty-one samples of metalliferous minerals chiefly from the Federated Malay States and neighbouring Dutch Islands, Saigon, etc., were examined during the year, as compared with 69 in the previous year.

Details are given in the subjoined table.

Wolfram.	Scheelite.	Tin.	Titani ferous Iron Ore.	Galena.	Gold.	Miscellaneous.
61	1	5	3	7	6	58

Under Miscellaneous are included samples of zinc blende, copper ore, molybdenite, native bismuth, coal, peat, phosphate rock, haematite, and 41 samples taken from the collection of Mr. STUART GREENSILL of Bentong, Pahang, now deposited in the Raffles Museum and forwarded by the Director for identification.

In addition to the above, 9 samples of mud, 5 of supposed Molybdenum ore, 3 of soil, 6 of tin-lead alloy, 2 of spelter and 1 of laterite were analysed and reported upon.

Liquors.

Forty-seven samples were examined during the year. They included brandies and whiskies examined for the Board of Licensing Justices, Chinese spirits and some cases where bottles bearing the labels, etc., of well-known brands were suspected to have been refilled locally.

Two Sike's Hydrometers were sent from British North Borneo for verification.

Methylated Spirits.

Six hundred and fifty-seven cases, 342 drums and 28 casks of arrack were methylated by the addition of pyridine or turpentine.

Deleterious Drugs.

(a) *Police Seizures*.—Eleven sets of exhibits, including about 700 grains of morphine and 5 hypodermic syringes were sent in for examination by the police. The corresponding number of sets last year was 25.

(b) *Excise Seizures*.—The Preventive Service sent in six sets of exhibits which included four one-ounce and eight half-ounce bottles of morphine, one one-ounce bottle of cocaine, 74 bottles and one box of pills containing opium, and about 5 lbs. of raw opium.

(c) *Chandu Dross*.—Exhibits in 66 cases of dealing in chandu dross were forwarded for examination by the Government Monopolies Department.

Toxicology.

(a) *Stomachs, stomach washings, etc.*:—

From.	Opium.	Morphine.	Arsenic.	Cantharidin.	Alcohol.	Ptomaines.	No poison present.	Total.
General Hospital, Singapore ...	2	...	...	...	...	...	6	8
T. T. S. Hospital, Singapore ...	...	1	...	...	2	...	6	9
Medical Officer, Malacca ...	1	...	...	...	...	3	1	5
Medical Superintendent, Lunatic Asylum, Singapore ...	...	...	...	...	...	...	1	1
Principal Medical Officer, Johore ...	...	...	1	1	...	...	1	3
Medical Officer, Karimon Islands ...	...	...	...	...	...	...	1	1
Total ...	3	1	1	1	2	3	16	27

In addition to the above, stomachs, etc., of two cows, a dog and a bird were sent by the Government Veterinary Surgeon, Singapore. No poison could be detected.

The presence of Cantharidin in the above case from Johore was due to the deceased having swallowed a decoction containing Chinese Blistering Beetles, a species of *Mylabris*. Wings and other parts of this beetle were found in other exhibits sent in connection with the same case.

In the Arsenic poisoning case, also from Johore, a plate of rice sent at the same time was found to contain $11\frac{3}{4}$ grains of white arsenic and the food vomited 3.38 grains.

A case in which an European child became very seriously ill when wearing a pair of new boots, is worthy of record. It was found that the boots were stained black with a preparation containing a considerable proportion of Nitrobenzene (Essence of Mirbane). The symptoms observed in the child corresponded with those due to this poison. The smell of Nitrobenzene is almost the same as that of Oil of Bitter Almonds, and the use of boot preparations having this smell should, whenever possible, be avoided.

Bloodstains.

Seven sets of exhibits consisting of 46 articles were received from the Chief Police Officers, Singapore and Malacca. Bloodstains were proved in 19 cases.

Urine.

Ten samples were sent in for analysis, one of which gave an Ammonia coefficient of 24.7.

Water.

(a) *Drinking Water*.—Of 12 samples from wells in Malacca, 4 were reported as suspicious, 3 as dangerous, 4 as containing oxidized sewage and 1 as absolutely bad, 2 samples from the Service Reservoir proved to be of good quality.

Four samples were received from Johore, 3 each from Labuan and Negri Sembilan, 2 from Perak and 1 from Singapore and 1 of Shanghai water from on board a steamer.

(b) *Water for other purposes*.—Four samples were reported upon for boiler purposes and 1 (from Kelantan) for use in washing and preparing rubber.

Miscellaneous.

Other samples, not included in the above, which were sent in for analysis and report, included:—Ten samples of gutta, 7 of various medicines, 6 of milk, 4 of syrup and 5 of sugar crystals for artificial colouring matters, 2 each of cube gambier, sewage effluent, copra oil cake and 1 each of jungle nuts, supposed bhang, basic slag, gas from the gas plant at the Chandu Factory, ashes from the Municipal Incinerator for manurial value, beer, rust tubercles from an old water-main, urinary calculus, laterite, white arsenic; a piece of glass found in a letter-box and a piece of blackened skin in an alleged shooting case, a ten-cent stamp, 4 registered envelopes and a stamped telegram and 4 sets of exhibits in cases of alleged poisoning.

A sample of natural gas from Coney Island, Federated Malay States, was found to have the following composition:—

Marsh Gas ...	...	...	...	90.3 per cent.
Carbonic Acid	...	...	...	5.1 „
Nitrogen ...	...	...	...	3.0 „
Other gases ...	...	...	...	1.6 „
				—
				100.0 „
				—

One visit was made to Malacca to give evidence at the Assizes.

Staff.

Mr. J. C. COWAP, Deputy Government Analyst, Penang, went on leave for 7 months on April 11th, Mr. J. W. HADDON, Assistant Government Analyst, Singapore, acted for him in Penang during his absence, returning to Singapore on November 18th.

Government Analyst's Department, Penang.

REPORT BY MR. J. C. COWAP, B. SC., F. I. C., *Deputy Analyst, Penang.*

The revenue of this Department for 1912 shows a slight decrease when compared with that of 1911. Owing in part to the pressure of official work and in part to the deficiencies of the present laboratory I was obliged to refuse a considerable amount of work sent in by local firms and estates.

Work of this nature, which can only be accepted when Government work allows, is frequently of great importance from both commercial and health points of view; and the fees thus received constitute a considerable portion of the revenue of the Department.

The subjoined table gives details of revenue and expenditure during the year. Details of the corresponding items of revenue for 1911 are included for comparison.

Revenue.	1911.	1912.	Expenditure 1912.
	\$ c.	\$ c.	\$ c.
Petroleum inspection fees	2,650 00	3,090 00	Personal Emoluments 4,921 91
Government Analyst's fees	2,289 00	1,354 00	Stores ... 224 04
Certificate for export of petroleum fees ...	449 00	451 50	Miscellaneous ... 162 36
Deposit Account ...	2 21	...	Transport, Travelling & Personal Allowances ... 35 30
Total ...	5,390 21	4,895 50	Total ... 5,343 61

The number of reports issued on general analytical work was 386 together with 65 reports on petroleum tested.

Petroleum.

(a) *Kerosine*.—Seventy consignments of kerosine were tested as to the flash point. On no occasion was petroleum not previously declared to be dangerous found to flash below the standard temperature (73°F.), although some flashed exactly at that temperature.

Particulars of petroleum imported and tested are given in the following table:—

Description of oil.	No. of Consignments.	Tins.	Tons.
<i>Case oil.</i>			
American oil ... { Devoes ...	6	106,000	...
... { Sylvan Arrow ...	8	308,264	...
Langkat oil ... { Dragon ...	18	279,600	...
... { Lamp Glass ...	8	23,000	...
... { Crown ...	4	54,000	...
... { Cross ...	1	5,000	...
<i>Bulk oil.</i>			
Pulau Samboe ...	1	...	325.75
Pulau Brandan ...	15	...	5,686.10
Pulau Soe-Soe ...	7	...	3,730.48
Balik Papan ...	2	...	1,022.96
Total ...	70	775,864	10,765.29

(b) *Dangerous Petroleum*.—Thirteen consignments of dangerous petroleum representing 287,288 gallons were imported during the year and in all cases the containing receptacles were examined and found to comply with the Rules under the Petroleum Ordinance.

(c) *Petroleum Residue*.—Three consignments representing 6,942·21 tons were imported. The flash point in each case was over 150°F.

Explosives.

Three consignments of explosives were tested on importation and found to pass the tests prescribed by the Rules of the Explosive Ordinance. These consignments represented 540 cases or 27,000 lbs. of gelignite.

No blasting gelatine or dynamite was imported to Penang during the year.

Counterfeit Coins.

Exhibits in 9 cases of counterfeit coining were received from the Police. These included the usual plaster of Paris moulds, Britannia metal spoons and other implements used in the manufacture of such coins.

One hundred and six coins were examined of which 6 only were genuine, of the remainder one was a counterfeit silver dollar and the others were made of Britannia metal.

In this connection may be mentioned a case of counterfeiting currency notes. In this case a number of exhibits, including 393 counterfeit \$1 notes and instruments for making them, were examined.

Deleterious Drugs.

There has been a great reduction in the number of deleterious drug cases investigated in this Department. During 1912, only 5 sets of exhibits were received from the Police as against 81 in 1911. The total number of exhibits was 120, including hypodermic syringe, needles, etc. The weight of morphine hydrochloride dealt with was 253·2 grains, and of cocain hydrochloride 4·3 grains.

Other Drugs.

A number of drugs were examined. Among them were various anti-opium medicines some of which contained morphine, poppy heads, bhang, quinine sulphate, sodium carbonate, boric acid, opium pills, etc.

Toxicology.

Two stomachs, etc., in cases of suspected poisoning were received from the local hospitals. One was found to contain alcohol and the other opium.

Intestine contents received from Province Wellesley were found to contain no poison.

The poison in a case of unlawfully administering drugs was found to be a decoction of datura seeds. A cup of coffee suspected to have been tampered with showed the presence of sodium carbonate.

Blood Stains.

Eleven sets of exhibits in all 53 articles including a sword, knives, hatchets and clothing were received from the Police to be examined for blood stains. Blood was found in the majority of cases.

Water.

Forty-eight samples of water were analysed during the year, of these 15 were condemned.

The usual quarterly samples from Bukit Panchor reservoir, Nibong Tebal, have been examined. Very little change appears to take place in this water. Experiments have been carried out with a view to testing the efficacy of the Jewell Filter plant erected at the Quarantine Station. According to the analytical results this filter is able to effect a very considerable improvement in both the appearance and character of the reservoir water.

Liquors.

There has been a great increase in the number of samples of liquor received from the Monopolies Department to be examined for duty purposes.

During 1912 the spirit strengths of 1,320 were examined.

Thirty-three other samples were examined for various reasons, usually in connection with a Police case. One sample of gin and one sample of port received a complete analysis.

Chandu.

Forty-seven sets of exhibits were received from the Monopolies Department for proof as to whether illicit chandu were present.

Milk.

Sixteen samples of milk were examined, received from various sources. 5 were found to contain added water and one contained 5 per cent of cane sugar.

Methylated Spirits.

Six consignments of methylated spirits were examined and certified to be properly methylated.

Miscellaneous.

A large number of samples falling under no particular head were reported on. These included rice, cement, paraffin wax, water in an arson case, pepper, beer, hair, wolfram and various other ores, mud, soils, guano, manures, coconut oil, paints, flour and many others.

Staff.

Mr. J. W. HADDON, B. Sc. F. I. C., acted as Deputy Analyst from 8th April, 1912 to 6th November, 1912, while I was on leave.

During the early part of the year the Deputy Analyst acted as Analyst to the Municipality and reported upon a large number of samples, chiefly of milk and water.

APPENDIX 7.

**Report on the Straits and Federated Malay States
Government Medical School for 1912.**

BY DR. R. D. KEITH, M.A., M.D., *Principal.*

1. The number of students continues to increase and the quality also shows signs of improvement. Now that the standard of preliminary education has been raised to the Senior Cambridge Certificate, there seems to be a general improvement in the students taking up the full course. Eight students obtained their diplomas during the year making the total number of licentiates passed in the last three years 31.

The number of students joining during the year 1912 was 23.

The total number on the roll was 82 which with 43 hospital assistant students makes a total number of 125.

2. Two students resigned during the year and two were dismissed for cheating in examinations.

3. The results of the examinations have been satisfactory except in the final year. This class has been a poor one from the beginning, and only what was expected occurred, but in future years better results are to be looked for, if the students maintain their present standard. On the whole the results are decidedly encouraging, but very close supervision by the staff is required and discipline has to be rigorously enforced.

4. *Staff, etc.*—Dr. LIVESEY resigned in February but continued to act till May, when Dr. T. D. KENNEDY took his place, the name of the post being changed to Assistant Principal. Captain WILLIAMSON, R.A.M.C., acted as lecturer in Surgery during the short session while Dr. GRAY was on leave. Owing to the appointment of Dr. G. A. FINLAYSON as expert on the Anti-malaria Board I had to take over the teaching of Clinical Medicine.

For this purpose I was given charge of two wards at Tan Tock Seng's Hospital and was, at the same time, appointed Consulting Physician to the hospital. This arrangement enabled me to follow up cases with the students and to keep a better control over both patients and students, and, at the same time, to obtain the best material in the hospital for the purpose of teaching. A résumé of the interesting points in connection with this work will be found elsewhere. Dr. W. M. SCOTT took Dr. FINLAYSON'S place as lecturer in Pathology, and, with his assistants Messrs. BARDHAM & ANDO has been very successful in his teaching. Dr. J. R. McVAIL, Medical Officer, Tan Tock Seng's Hospital, has taken a great deal of interest in the students and the hospital assistants and has given the latter class a very valuable course of instruction. Dr. GILMORE ELLIS has lectured on nervous diseases. Dr. MACDOUGALL gave a course of lectures in medicine during the short session and has taken the place of Dr. MURRAY ROBERTSON as lecturer on Materia Medica during his absence on leave. Miss MACLEAN in the Maternity Hospital and Mrs. A. J. AMERY in her own home and also outside have given very valuable help and have imparted to the students an interest and enthusiasm which has never been shown before in this branch of the curriculum.

The Biology class was conducted by Dr. E. A. ELDER. The rest of the teaching staff remained the same as in previous years and gave to the school their valuable services freely and ungrudgingly.

5. A considerable number of specimens has been added to the Pathological Museum during the past year, some of them of great interest. For a number of these we are indebted to Dr. FLETCHER, Institute for Medical Research, Kuala Lumpur. A selection of specimens was sent to the meeting of the Far Eastern Society for Tropical Medicine, notably a series illustrating syphilis of the heart. A catalogue of the specimens illustrating the diseases of the circulation has been printed and has been distributed to students. Owing to my many other duties I have been unable to get further parts ready for the printers although the catalogue is now all typed and could soon be prepared.

6. The Students' Recreation Club has been active during the year and a considerable degree of interest was manifested over various athletic events. Tennis seems to be the favourite form of sport. The Medical Section, Singapore Volunteer Corps, took part in the various parades, field days, night attack, etc., with the Singapore Volunteer Corps.

7. The sum of \$124,800 was handed over to the Council of the Medical School by the Committee of the King EDWARD VII Memorial Fund to found a Professorship to be called the King EDWARD professorship. The holder of this post is in addition to the ordinary staff and is entirely under the control of the Council of the School. Arrangements are being made for filling the post.

8. Beaconsfield has been purchased as a site for a hostel for Federated Malay States students.

9. The hospital assistant class of student appears to be steadily improving and there seems to be a prospect of putting out a large number of useful men of this type. Since 1906, 57 hospital assistants' certificates have been granted.

10. A number of maternity probationers and midwives have been given certificates after training and examination at the Maternity Hospital.

11. The behaviour of the students was good on the whole.

12. Speaking generally I think the school continues to progress along sound, unambitious lines and to be serving the purpose for which it was founded. The standard of the qualification must be maintained at all costs, otherwise it would be easy to pour a stream of ill-educated persons into the Straits Settlements and Federated Malay States to work their will on the poor and ignorant.

APPENDIX K.

Pathological Department.REPORT BY DR. W. M. SCOTT, *Acting Government Pathologist.***Laboratory.**

There were 1,294 specimens examined during the year, 289 being sent in by private practitioners and 1,005 from Government institutions.

WIDAL REACTION.

There were 544 examinations made of which 118 gave a positive reaction and 426 negative. As the blood was examined two or three times in several instances the former figure does not represent 118 cases of Enteric Fever.

Monthly incidence.

January	... 10	May	... 9	September	... 6
February	... 9	June	... 8	October	... 5
March	... 10	July	... 8	November	... 19
April	... 4	August	... 7	December	... 23
	—		—		—
	33		32		53
	—		—		—

During the months of November and December there were almost as many cases as during the preceding six months. The autumnal rise is thus two months later than in former years. There is a slight fall in the number as compared with 1911 with 157 positive reactions.

MALARIA.

The parasite was demonstrated in 43 and was not found in 133 specimens submitted. Subtertian and benign tertian infections were equal in number.

TUBERCULOSIS.

There were 137 specimens examined in 42 of which the bacillus was discovered.

DIPHTHERIA.

Twenty-six swabs from throats were cultivated on blood-serum and in 8 the Klebs-Löffler bacillus was demonstrated, these representing 6 cases of the disease.

GONORRHŒA.

Forty-three smears of urethral or vaginal discharge were examined; in 11 the specific diplococci were noted.

PLAGUE.

From the middle of December, 1911 to the end of 1912 a total of 3,107 rats were examined and in 33 the B. Pestis was found. The months of January and February provided the largest numbers of positive cases, 6 and 8, respectively. In the months of August, November and December no plague infected rats were found. The epizootic was thus at no time intense the percentage for the year being practically one per cent and for the most heavily infected months 2.5 per cent. The lesion in 30 of the 33 cases consisted of an acutely inflamed axillary bubo. An accurate record of the species collected was not made as many were too young for easy determination and many others too much mutilated. *Mus Decumanus* was most numerous, the remainder being a pale short-tailed variety of *Mus Rattus*.

VARIOUS.

Other examinations included 24 of urine for casts, etc., 32 of fæces for amœbæ or ova, 20 of blood for differential count of the white cells, 23 of pus, body fluids, etc., for bacterial contents, 30 pieces of tissue for microscopical diagnosis, 10 smears for the

B. Lepræ of which two were positive and 62 of blood for Wassermann's reaction of which 24 were positive. The method employed was that originally described by Wassermann modified to give a more accurate estimate of the amount of complement-fixation.

Other samples included examination for Paratyphoid, Dysentery and Malta fever by agglutination, bacteriological examination of the blood for streptococci, etc., by culture, examination of stomach contents, etc. Several vaccines were prepared chiefly staphylococcal. The precipitin test for the presence of human blood was performed in three medico-legal cases.

WATER—MUNICIPAL SUPPLY.

Fifty-three specimens were examined, the weekly sample being taken from standpipes in different parts of the Municipal area. The average number of colonies per c. c. developing on agar was 153, on gelatine 146, representing a distinct improvement in the bacterial content as compared with previous years. The average for the last three months of the year was down to 100 per c. c., for December alone 40 per c. c. In MacConkey's medium .25 c. c. produced gas and acid in 24 hours. Fifteen other water supplies were examined and reports submitted.

MORTUARY.

Tan Tock Seng Hospital.

Number of autopsies performed 1,422. Of these 67 on behalf of the Coroner.

RETURN SHOWING THE IMMEDIATE CAUSE OF DEATH.

Beri-beri ...	107	Diseases of circulatory system ...	48
Pneumonia, lobar ...	65	Diseases of genito-urinary system ...	34
Other respiratory diseases ...	57	Various septic conditions ...	84
Malaria ...	216	Plague ...	7
Poisoning and accidents ...	35	Small-pox ...	1
Tuberculosis ...	198	Tetanus ...	4
Enteric fever ...	33	Ankylostomiasis ...	28
Dysentery ...	334	Leprosy ...	1
Cholera ...	10	Syphilis ...	9
Suppurative peritonitis ...	45	New growth, malignant ...	26
Other diseases of alimentary system ...	40	Schistosomiasis ...	9
Diseases of nervous system ...	25	Senility ...	3
		Unknown, too decomposed ...	3

RETURN SHOWING INCIDENCE OF DISEASE.

General Diseases.

Beri-beri ...	112	Sapræmia ...	41
Cholera ...	10	Splenic anæmia ...	5
Enteric fever ...	58	Lymphatic Leukæmia ...	1
Dysentery ...	482	Syphilis ...	13
Tetanus ...	4	Small-pox ...	1
Pneumonia ...	115	Ankylostomiasis ...	37
Malaria ...	284	Schistosomiasis ...	10
Plague ...	7	Eclampsia ...	1
Leprosy ...	4	Still birth ...	1
Pyæmia ...	8	Senility ...	3
Septicæmia ...	8		

LOCAL DISEASES.

A.—Nervous System.

Meningitis (a) septic ...	6	Pachymeningitis, chronic ...	1
" (b) tubercular ...	2	Cerebral abscess ...	1
" (c) cerebro-spinal ...	4	Cerebral gumma ...	4
" (d) pneumococcal ...	4	Myelitis, chronic ...	1
Tabes dorsalis ...	1		

B.—Circulatory System.

Hæmorrhage, intracranial ...	6	Pericarditis (b) chronic ...	3
Thrombosis (a) cerebral with softening ...	2	„ (c) tuberculous ...	3
„ (b) cranial sinuses ...	2	Endocarditis, chronic (a) aortic ...	19
„ (c) mesenteric artery... ..	1	„ (b) mitral ...	7
„ (d) popliteal vein ..	1	„ (c) ventricular wall ...	2
„ (e) splenic vein ...	2	Endocarditis, ulcerative (a) aortic ...	8
„ (f) left ventricle ...	1	„ (b) mitral... ..	3
Aneurism of aorta (a) thoracic ...	3	„ (c) auricular wall ...	1
„ (b) abdominal ...	2	Cardiac syncope—fatty heart ...	2
Aneurism of carotid artery ...	2	Syphilis of heart ...	1
Advanced atheroma ...	158		
Pericarditis (a) acute ...	17		

C.—Respiratory System.

Bronchitis, acute ...	3	Tuberculosis (a) general ...	9
„ chronic ...	5	„ (b) acute miliary ...	3
Broncho-pneumonia ...	56	Tuberculosis of lung (a) active ...	255
Bronchiectasis ...	4	„ (b) quiescent ...	20
Pulmonary œdema—marked ...	57	„ of larynx ...	57
„ collapse ...	4	„ of Trachea ...	3
„ gangrene ...	24	Pleuritis with adhesions (a) recent ...	63
„ abscess ...	1	„ „ „ (b) chronic ...	99
„ infarct ...	3	„ tuberculous ...	223
Pneumonia, lobar ...	115	„ with effusion ...	16
Empyema ...	51	Anthracosis ...	1
Pyopneumothorax ...	10	Marked Emphysema ...	69

D.—Digestive System.

Gastric ulcer ...	18	Tuberculous ulceration of appendix ...	1
Duodenal ulcer ...	4	„ abscess pericæcal ...	1
Appendicitis, acute ...	3	„ suprarenal ...	1
Cholangitis, acute septic ...	10	Enteric fever ...	58
Cholecystitis ...	11	Entero-colitis, acute ...	16
Biliary Calculi ...	32	Intestinal obstruction ...	1
Hepatic abscess ...	15	Intussusception ...	2
„ gumma ...	3	Peritonitis (a) suppurative ...	80
„ cirrhosis ...	70	„ (b) chronic ...	10
Congenital cyst of liver ...	5	„ (c) tuberculosis ...	13
Foaming liver ...	1	Hæmorrhoids, severe ...	2
Perihepatitis, chronic ...	23	Hernia, inguinal ...	11
Tuberculosis of liver ...	12	Dysentery, amœbic (a) acute ...	94
Splenic gumma ...	9	„ „ (b) chronic ...	231
„ infarct ...	14	„ bacillary (a) acute ...	62
Tuberculosis of spleen ...	27	„ „ (b) chronic ...	59
Perisplenitis, chronic ...	64	„ mixed infection	
Malarial pigmentation of spleen ...	154	„ (a) acute ...	14
Parotitis, septic ...	1	„ (b) chronic ...	19
Tuberculous ulceration of tonsil ...	3	„ malarial ...	3
„ „ pharynx ...	2	Schistosome infection of gut ...	15
„ „ gut ...	175		

E.—Genito-Urinary System.

Cystitis, acute ...	5	Pyonephrosis ...	3
Tuberculosis of bladder ...	3	Nephritis, parenchymatous	
Vesical calculus ...	2	„ (a) acute ...	12
Renal abscess ...	3	„ (b) chronic ...	14
„ calculi ...	6	„ interstitial, chronic ...	65
„ infarct ...	3	Uræmia ...	4
„ gumma ...	1	Diabetes mellitus ...	1
Tuberculosis of kidney ...	13	Stricture of urethra ...	4
Hydronephrosis ...	3	Extravasation of urine ...	1
Tuberculosis of testicle ...	2	Urinary fistula ...	2
Pyelonephritis ...	2	Puerperal Endometritis ...	1

F.—Diseases of Bones and Joints.

Necrosis of jaw	2	Ankylosed joints	2
„ tibia	2	Synovitis, acute	4
„ rib	1	Arthritis, septic	10
„ cranial bones	1	Otitis media septic	3
Acute periostitis of tibia	1	„ „ tuberculous	1
Caries of spine	7	Gumma of sternum	1
Tuberculosis of hip joint	2		

G.—New Growth—Malignant.

Epithelioma of penis	1	Cancer of stomach	3
„ „ scalp	1	„ „ œsophagus	1
Cancer of liver	8	„ „ glands of neck	4
„ „ lung	3	Mediastinal sarcoma	1
Glioma of brain	2	Sarcoma of kidney	1
Sarcoma of heart and pericardium	1	„ „ orbit	1

Benign.

Rectal polypus	1	Chondro-adenoma of parotid	1
Angioma of liver	6	Angioma of abdominal wall	1
Fibroma of kidney	1		

H.—Affections produced by External Causes.

Fracture of skull	4	Strangulation	4
„ spine	2	Drowning	1
„ femur	2	Stab wounds	6
„ tibia and fibula	1	Cut throat	1
„ humerus	1	Gunshot wounds	1
„ radius and ulna	1	Surgical emphysema	2
„ ribs	4	Laceration of brain	6
Laceration of lung	3	Poisoning with alcohol	1
Rupture of spleen	4	„ „ opium	1

K.—Varied conditions.

Abscess, axilla	1	Phagedæna of tonsil	1
„ iliopsoas	2	Extensive ulceration (a) trunk	3
„ lumbar	2	„ „ (b) upper limb	2
„ perirectal	2	„ „ (c) lower limb	25
„ subphrenic	2		
Cellulitis, acute (a) trunk	2	Extensive bed sores	11
„ „ (b) upper limb	2	Spinal curvature, kyphosis	1
„ „ (c) lower limb	5	Tuberculosis lymphatic glands	
Gangrene (a) trunk	1	bronchial	11
„ „ (b) upper limb	3	Tuberculosis cervical	3
„ „ (c) lower limb	27	„ „ abdominal	29
Cancrum oris	3	„ „ inguinal	2
Phagedæna of cornea	2		
„ „ scrotum	1		

Mortuary, Sepoy L.L.es.

Total number of autopsies performed, 294; of these 112 on behalf of the Coroner.

RETURN SHOWING IMMEDIATE CAUSE OF DEATH.

Beri-beri	30	Diseases of the circulatory system	13
Pneumonia, lobar	22	„ „ genito-urinary system	11
Other diseases of respiratory system	15	Various septic conditions	16
Malaria	24	Plague	6
Poisoning and accidents	50	Small-pox	2
Tuberculosis	20	Tetanus	3
Enteric fever	8	Ankylostomiasis	3
Dysentery	17	New Growth, malignant	3
Cholera	5	Congenital disease	3
Suppurative peritonitis	24	Siriasis	2
Other diseases of alimentary system	8	Black-water fever	1
Diseases of nervous system	7	Unknown—too decomposed	1

RETURN SHOWING INCIDENCE OF DISEASE.

General Diseases.

Beri-beri ...	...	30	Septicæmia ...	...	5
Cholera ...	...	5	Sapræmia ...	...	4
Enteric fever ...	...	24	Splenic anæmia ...	...	1
Dysentery ...	...	35	Pernicious anæmia ...	...	3
Tetanus ...	...	3	Ankylostomiasis ...	...	3
Pneumonia ...	...	23	Lymphatic leukæmia ...	...	1
Malaria ...	...	29	Congenital debility ...	...	1
Black-water fever ...	...	1	Siriasis ...	...	2
Small-pox... ..	...	2	Syphilis ...	...	1
Plague ...	...	6	Schistosomiasis ...	...	2
Pyæmia ...	...	1			

LOCAL DISEASES.

A.—Nervous System.

Meningitis (a) septic ...	...	1	Myelitis, acute ...	...	1
„ (b) tuberculous ...	...	2	Shock ...	...	4
„ (c) cerebro-spinal ...	...	2	Cerebral gumma ...	...	1

B.—Circulatory System.

Hæmorrhage, cerebral ...	...	2	Endocarditis, chronic (a) aortic ...	...	4
Thrombosis „ ...	...	1	„ (b) mitral ...	...	5
Aneurism of thoracic aorta ...	...	2	„ ulcerative (a) aortic ...	...	2
Arterio-sclerosis, advanced ...	...	14	„ (b) mitral ...	...	1
Cardiac syncope (a) fatty heart ...	...	4	Cardiac syphilis ...	...	1
„ (b) acute dilatation ...	...	1	Brown atrophy of heart, marked ...	...	1
Pericarditis (a) acute ...	...	8	Heart, congenital malformation ...	...	1
„ (b) chronic ...	...	1			

C.—Respiratory System.

Bronchitis, acute ...	...	3	Tuberculosis of lung (a) active ...	...	17
Broncho-pneumonia ...	...	22	„ (b) quiescent ...	...	6
Pulmonary œdema ...	...	1	„ larynx ...	...	2
„ collapse ...	...	2	Pleuritis (a) recent with adhesions ...	...	26
„ gangrene ...	...	2	„ (b) old „ ...	...	19
Pneumonia, lobar ...	...	23	„ (c) tuberculous ...	...	18
Empyema ...	...	8	„ (d) with effusion ...	...	4
Anthraxis ...	...	1	„ (e) septic ...	...	3
Tuberculosis, general ...	...	2	Pneumothorax ...	...	1
„ miliary ...	...	2	Pyopneumothorax ...	...	1

D.—Digestive System.

Appendicitis, acute ...	...	3	Enteric fever ...	...	24
Gastric ulcer ...	...	3	Entero-colitis, acute ...	...	1
Pyloric stricture ...	...	1	Intestinal obstruction ...	...	2
Duodenal ulcer, perforated ...	...	1	Intussusception ...	...	1
Gastroenteritis ...	...	2	Hernia, inguinal ...	...	1
Hepatic abscess ...	...	1	Tuberculosis of small gut, active ...	...	9
„ gumma ...	...	2	„ large „ ...	...	5
„ cirrhosis ...	...	12	Imperforate anus ...	...	1
Hepatitis, acute ...	...	1	Marasmus ...	...	1
Perihepatitis, chronic ...	...	7	Schistosome infection of gut ...	...	2
Tuberculosis of liver ...	...	2	Dysentery (a) amœbic, acute ...	...	13
Cholecystitis ...	...	2	„ (b) „ chronic ...	...	13
Biliary calculi ...	...	2	„ (c) bacillary, acute ...	...	7
Perforation of gall-bladder ...	...	1	„ (d) „ chronic ...	...	2
Pancreatitis (a) acute... ..	...	1	Perisplenitis, chronic ...	...	4
„ (b) chronic ...	...	2	Tuberculosis of spleen ...	...	4
Peritonitis (a) suppurative ...	...	26	Splenic infarct ...	...	2
„ (b) chronic ...	...	3	„ abscess ...	...	1
„ (c) tuberculosis ...	...	1	Malarial pigmentation of spleen ...	...	35
Parotitis, septic ...	...	1			

E.—Genito-Urinary System.

Cystitis, acute	...	2	Nephritis (<i>b</i>) parenchymatous,		
Calculus, vesical	...	2	chronic	...	2
„ renal	...	2	Nephritis (<i>c</i>) interstitial, chronic	...	11
Prostatitis, septic	...	1	„ (<i>d</i>) septic	...	1
Orchitis	...	1	Hydronephrosis	...	3
Infarct of kidney	...	3	Pyelonephritis	...	1
Tuberculosis of kidney	...	1	Endometritis	...	1
„ bladder	...	1	Rupture of uterus	...	2
Congenital cystic kidney	...	1	Ruptured ectopic gestation	...	1
Uræmia	...	2	Salpingitis, chronic	...	5
Nephritis (<i>a</i>) parenchymatous, sub-acute	...	8			

G. & K.—Varied conditions.

Adenoma of thyroid	...	1	Cellulitis of lower limb	...	1
Sebaceous cysts	...	1	Ulcer perforating Radial artery	...	1
Cancer of stomach	...	2	Suppuration of mesenteric glands	...	4
„ liver	...	1	Otitis media, suppurative	...	1
Tonsillitis, gangrenous	...	2	Necrosis of maxilla	...	1
Retropharyngeal abscess	...	1	Tuberculous sacro-iliac joint	...	1
Abscess, subphrenic	...	2	Chancroid	...	3
Abscess, iliopsoas	...	1	Lateral scoliosis	...	1
Carbuncle of back	...	1			

H.—Affections produced by external causes.

Fracture of skull	...	16	Rupture of kidney	...	2
„ spine	...	2	Cerebral laceration	...	5
„ pelvis	...	3	Laceration of lung	...	2
„ jaw	...	1	Strangulation	...	4
„ humerus	...	1	Drowning	...	4
„ femur	...	3	Cut-throat	...	2
„ ribs	...	8	Stab wounds	...	9
Dislocation of shoulder joint	...	1	Gunshot wounds	...	2
„ elbow	...	1	Surgical emphysema	...	1
Rupture of liver	...	6	Laceration of testicle	...	1
„ spleen	...	8	Poisoning, ptomaine	...	1
„ intestine	...	5	„ chloroform	...	1
„ bladder	...	1	„ opium	...	1
„ urethra	...	1			

Quarantine Camp.

Total number of autopsies performed, 124.

RETURN SHOWING IMMEDIATE CAUSE OF DEATH.

Beri-beri	...	4	Tuberculosis of gut	...	1
Pneumonia, lobar	...	1	Cerebral hæmorrhage	...	1
Broncho-pneumonia	...	2	Meningitis, cerebro-spinal	...	2
Pulmonary gangrene	...	1	Enteritis	...	2
Malaria	...	4	Cardiac syphilis	...	1
Asphyxia	...	1	Uræmia	...	2
Septicæmia	...	4	Gangrene of spleen	...	1
Enteric fever	...	4	Small-pox	...	2
Dysentery	...	12	Plague	...	17
Suppurative peritonitis	...	2	Cholera	...	59
General tuberculosis	...	1			

RETURN SHOWING INCIDENCE OF DISEASE.

General Diseases.

Cholera	...	60	Enteric fever	...	5
Plague	...	17	Malaria	...	5
Small-pox	...	2	Dysentery	...	18
Beri-beri	...	4	Ankylostomiasis	...	1

LOCAL DISEASES.

A.—Nervous System.

Meningitis, septic ...	2	Ædema of meninges ...	1
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B.—Circulatory System.

Gumma of heart ...	1	Hæmorrhage, cerebral... ..	1
Advanced atheroma ...	1	Pericarditis, acute ...	3
Endocarditis chronic ...	2		

C.—Respiratory System.

Pneumonia, lobar ...	4	Tuberculosis, general ...	1
Broncho-pneumonia ...	2	„ of lung (a) active ...	3
Pulmonary gangrene ...	1	„ „ (b) quiescent ...	1
„ œdema ...	5	Pleuritis (a) recent ...	1
„ collapse ...	2	„ (b) chronic ...	6
„ emphysema ...	2	„ (c) tuberculous ...	2

D.—Digestive System.

Strangulated hernia, inguinal ...	1	Enteritis ...	2
Cholangitis ...	1	Splenic infarct ...	1
Biliary calculi ...	3	„ gangrene ...	1
Hepatic cirrhosis ...	7	Perisplenitis, chronic ...	3
„ abscess ...	1	Peritonitis (a) septic ...	4
„ gumma ...	1	„ (b) tuberculous ...	1
Fatty degeneration of liver ...	19	Dysentery (a) acute, amœbic ...	9
Perihepatitis, chronic ...	3	„ (b) chronic „ ...	4
Gangrene of small intestine ...	1	„ (c) acute bacillary ...	4
Tuberculosis of „ „ ...	1	„ (d) chronic „ ...	1
Stercoral ulceration of colon ...	1	Enteric fever ...	5
Malarial pigmentation of spleen ...	16		

E.—Genito-Urinary System.

Nephritis, parenchymatous, chronic ...	1	Uræmia ...	2
„ interstitial, chronic ...	2	Salpingitis chronic ...	1
Cystic ovary ...	1		

K.—Varied Conditions.

Cellulitis ...	1	Suppurative synovitis ...	1
Asphyxia ...	1		

General Diseases.

1. *Beri-beri*.—Of 116 cases showing the typical lesions 107 or 92 per cent died of the disease. As compared with 1911, there is a slight increase in the total number of fatal cases and a considerable increase in the case-incidence per cent, 6 per cent of total autopsies as compared with 3.5. The majority were of the acute cardiac type with only slight anasarca. The heart in these cases presents a peculiar type of pseudo-hypertrophy in which the enlargement is for the most part the effect of œdema of the muscular walls.

2. *Enteric Fever*.—The incidence and mortality in this disease remain high. Of 87 deaths 30=34 per cent were due to a suppurative peritonitis, the result of perforation of the gut. I desire to call attention to a striking feature in many of these cases, the absence of extensive ulceration: the perforating ulcer is often practically solitary and though deep enough to reach the serous coat may have a superficial area of less than half an inch square. The micro-organism isolated from the spleen in such cases is a typical *B. Typhosus* and the Widal is positive. The cause of the peculiarity is difficult to define: the cases occur in 'rikisha-pullers almost exclusively, 9 out of 11 found at the Morgue at Sepoy Lines belonging to this class. Apart from this special incidence the general excessive incidence of enteric fever on the 'rikisha coolie should be mentioned. Of 53 cases at the General Hospital 34 were of this occupation, and of 24 autopsies at the Morgue 12, all between the ages of 20 and 30, had been engaged in this particular calling. The question of "typhoid carriers" existing in the lodging-houses of these men should undoubtedly be investigated.

3. *Malaria*.—In 318 autopsies, as compared with 624 in 1911, malarial parasites were demonstrated in the spleen or peripheral blood: other 205 cases showed pigment in the spleen the result of a previous malarial infection making a total of 523 with signs of malaria or 28 per cent of all autopsies. In 244 or 77 per cent the malarial attack was the immediate cause of death. One case of Blackwater fever came to autopsy.

4. *Plague*.—Thirty cases were observed in the course of the year almost all occurring during the first six months. Three of these were of the pneumonic variety, the remainder bubonic with the lesions in the femoral and iliac glands in the great majority. The epizootic disease has been referred to above.

5. *Cholera*.—There were 75 cases of which 37 were brought in dead: of the others all but 2 had received at least one intravenous injection of hypertonic saline, death occurring within 8 hours of admission in 14 cases, in from 8 hours up to 1 day in other 14, the remaining 10 surviving from 1 to 6 days. In the latter group the post-mortem appearances were those of uræmia associated with marked œdema of the lungs.

6. *Dysentery*.—Five hundred and thirty-five. The case incidence of amoebic dysentery still remains high, 21·5 per cent as compared with 18 per cent last year. There is little doubt that a recent attack of malaria predisposes to the amoebic infection: a large proportion of the cases still show pigment in the spleen. The increase may thus be an aftermath from the excessive malarial incidence of the previous year. Rather over 4 per cent had abscess of the liver.

The lesions characteristic of bacillary dysentery were found post-mortem in 135 cases of which 73 were acute and 62 chronic. Of the acute cases in which a history was obtained a large majority died within three days of the onset of symptoms. In about 30 of these a careful bacteriological examination was made and invariably showed the presence of non-lactose-fermenters. Of these a large majority was of the Flexner type or nearly related; in 4 cases a bacillus corresponding culturally with the *B. Dysenteriae* (Shiga) was isolated.

In a certain number of cases of chronic dysentery the lesions differed distinctly from the usual amoebic type, the ulcers being shallow without undermining and with little necrosis. In several of these a species of *Cercomonas* occurred abundantly in the contents of the bowel and may have a causal significance.

7. PNEUMONIA.

Lobar incidence—Acute.

Right upper	...	12	Left upper	...	6
„ „ and middle	...	6	„ lower	...	35
„ „ and lower	...	3	Both lobes	..	6
„ middle	...	6			
„ „ and lower	...	11			
„ lower	...	17			
All lobes	...	18			

Lobar incidence—Chronic.

Right upper	...	2	Left lower	...	7
„ „ and middle	...	2	Both lobes	...	1
„ middle	...	3			
„ „ and lower	...	4			
„ lower	...	6			
All lobes	...	5			

The accompanying inflammations of the serous membranes occurred as usual: there was rather an unusual frequency of involvement of the pericardium. There were several well-marked cases of pneumococcal septicæmia in which no fibrinous exudate could be detected in the lungs though pneumococci were abundant in the spleen and in the intensely congested lymphatic glands post-mortem. These cases present a strong superficial resemblance to plague both clinically and at autopsy. They seem to occur chiefly among young Tamils.

Local Diseases.

A.

Two cases of meningococcal meningitis from the same small island occurred within one week : the few other cases were quite sporadic.

B.

Special attention was directed at autopsies in the latter part of the year to the question of cardiac hypertrophy as influenced by occupation. The coolie whose heart presents the greatest degree of apparent response to muscular work is the "dock coolie" with the "shop coolie" a good second: the 'rikisha puller's heart rarely exceeds the normal to an appreciable degree. The chief preventable disorder under which he suffers as a result of his occupation is undoubtedly Enteric fever as noted above.

C.

The percentage incidence of tuberculous disease of the lung remains about the same. It seems on the whole to run a more chronic course than in temperate latitudes.

D.

Causes producing inflammation of the peritoneal sac:—

Acute—General.

Enteric fever ...	29	Strangulated Hernia ...	5
Dysentery ...	15	Septic hydrocele ...	1
Tuberculosis of the gut ...	1	Cholecystitis ...	2
Gastric ulcer ...	4	Hepatic abscess ...	2
Duodenal ulcer ...	1	Splenic abscess ...	1
Rupture of the small gut ...	2	Primary streptococcal ...	4
" gall bladder ...	1	Primary pneumococcal ...	3
Appendicitis ...	5	Intestinal obstruction ...	2
Traumatic causes ...		7	

Acute—Localised.

Enteric ...	2	Appendicitis ...	1
Dysentery ...	18	Intussusception ...	1
Hepatic abscess ...	1	Pneumococcal ...	2

In 17 cases of cirrhosis of the liver the primary cause was the presence in very large numbers of the ova of *Schistosomum Japonicum*: in the large gut of these cases the same ova were invariably present in varying number. The adult worms were discovered lying in the mesenteric veins in two cases. One case of infection with the *Schistosomum Mansoni* was observed in a native of Egypt.

E.

The condition of the kidney in ankylostomiasis is worthy of special note. Invariably there is a considerable degree of fatty degeneration: in many cases it is extreme. There is much catarrh of the secreting tubules with changes in the glomeruli like those of subacute nephritis. These changes are not the result of prolonged administration of such anthelmintics as eucalyptus or thymol but are equally marked in cases where no treatment has been employed as far as can be learned. There can be no doubt that this morbid change in the kidney is a potent factor at least equal to the progressive anæmia in the fatal termination of the disease.

F. & G.

Primary Carcinoma of the liver was noted in 9 cases supervening in all on a previous cirrhosis. The incidence of this disease is undoubtedly higher than in Europe and the relative youth of the individuals attacked is also noteworthy.

K.

<i>Ascaris lumbricoides</i> ...	...	137
<i>Trichocephalus trichiurus</i> ...	...	48
<i>Ankylostoma duodenale</i> ...	...	187

There is a definite increase in the frequency with which the last parasite is found post-mortem and also in the number of cases in which its effects are so great as to compel it to be regarded as the immediate cause of death.

Distomiasis.

The *Clonorchis Sinensis* was found in the bile-ducts in 33 cases: in none of these did its presence seem a factor in the fatal termination.

Schistosomiasis.

The ova of the *Schistosomum Japonicum* were found in 17 cases, those of the *Schistosomum Mansoni* in one case.

Staff.

I took over the duties of the post from Dr. FINLAYSON on March 1st. Mr. S. N. BARDHAN assisted me up to October 11th, when he went on leave, Mr. K. ANDO from 20th February onwards. The work of both these officers is worthy of commendation.

APPENDIX L.

Annual Report on the Medical Department, Labuan, for the Year 1912.

Population and health. Table showing estimated population, with the birth and death-rates, for the years 1910 to 1912.

Year.	Estimated Population.	Births.	Deaths.	Birth-rate.	Death-rate.
1910 ...	8,199	235	267	28·66	32·56
1911 ...	6,548	189	183	28·87	27·97
1912 ...	6,634= Males 3,956 Females 2,678	211	125	31·80	18·84

The above table proves the year to have been exceptionally healthy. The birth-rate is the highest for the past 10 years or more and the death-rate shows a distinct improvement. I attribute the satisfactory state of the general health of the community to the fact that no new coolies have been imported into Labuan, and of those who were originally imported nearly all have left the Island, leaving behind only Natives and Chinese who are well acclimatised. Moreover no dangerous occupations nor trades are now followed in Labuan. There are no estates employing contract coolies, and no estates employing more than 20 free coolies.

The infantile mortality has also improved, as is shown in the following table:—

Year.	No. of Deaths under 1 year.	Percentage of Deaths under 1 year to total Death-rate.	Percentage of Deaths under 1 year to total Birth-rate.
1910 ...	76	28·08	32·34
1911 ...	56	30·60	29·62
1912 ...	42	33·60	19·90

Of the total number of deaths, malaria accounted for 34, Pulmonary Tuberculosis for 17, Old Age and Debility for 16, Beri-beri for 3 and Dysentery for 3. Of the infantile mortality, one third of the deaths were ascribed to "Fever" and one-fourth to "Convulsions." No epidemic disease has occurred during the year.

Port Health Work.—Eight steamers were examined during the year. All with the exception of one were granted immediate pratique. The s. s. *Man Sang* from Hongkong infected with small-pox was detained at the Quarantine Anchorage for 3 days whilst a temporary attap and kajang shed was being erected on Pulau Papan for the accommodation of the 127 deck passengers. The case of confluent small-pox was removed to Hospital. All the members of the crew were vaccinated. No further case of small-pox occurred. Twenty-three bills of health were issued during the year.

Malaria.—There has been less sickness from this disease, the percentage of deaths being 27.2 of the total death-rate as against 31.1 in 1911. 58 cases were admitted to hospital as against 118 in 1911. 198 cases were treated as out-patients, compared with 479 in 1911. This shows a very considerable decrease on all cases of malaria, but the percentage of sub-tertian cases has risen throughout the year.

About 2,000 dollars were spent by the Public Works Department upon anti-malarial works. These include additional concrete drains in the Town of Victoria: the filling up of a large area of swampy land at the eastern extremity of the town and the cutting and burning of large areas of jungle (secondary) in the suburbs. These works have been of benefit to the health of the town.

Ninety-seven ounces of quinine were distributed during the year. The Sanitary Inspector has paid special attention to minor anti-malarial measures.

Beri-beri.—Sixteen cases were treated in hospital as against 44 in 1911, and there were only 3 deaths attributed to this disease as against 10 in 1911. Par-boiled rice has been used throughout the year in hospital.

Pulmonary Tuberculosis.—Thirteen cases were treated in hospital with 4 deaths. The percentage of deaths ascribed to this disease was 13.6 of the total death-rate. This is slightly higher than last year.

Dysentery and Diarrhœa.—Severe bowel diseases are rare in Labuan, nearly all the dysentery cases treated here coming over from British North Borneo for treatment.

Police Force.—The general health of this force has been satisfactory: 41 cases have been admitted to hospital as against 67 in 1911, and 170 were treated as out-patients as against 318 in 1911. There were no deaths.

Prisoners.—The health of the prisoners has been good throughout the year. The short sentenced prisoners almost invariably increase in weight and health during their sojourn in the gaol. No deaths occurred.

Out-patients.—Six hundred and ninety-nine cases were treated, this shows a falling off of over 200 when compared with 1911 but the general improvement in the public health probably accounts for the decrease. Malaria was the principal disease treated.

Vaccination.—There were 459 vaccinations done of which 314 were successful, 122 were unsuccessful, and 23 were not seen. The number of vaccinations was considerably larger than last year, due to the vaccinating of the deck passengers and crew of s.s. *Man Sang* from Hongkong infected with small-pox. Those vaccinated from s.s. *Man Sang* were all secondary vaccinations and the number of failures includes 105 of these, leaving only 17 failures out of 249 vaccinations proper to Labuan, except for the 23 not seen. Ninety-two cases were of 3 months and under, 97 cases were of 4 months to one year, and 270 cases were above the age of one year.

Meteorological.—The North-East Monsoon blew from January to the beginning of May: during this season the supply of water for domestic purposes began to fail, until in April the Reservoir supplying the town of Victoria completely failed, and trains were requisitioned to bring water down from Coal Point, a distance of from 7 to 8 miles. The hospital well was dry from January to April with short intervals of

water immediately after rain. The South-West Monsoon blew from the beginning of May to the middle of November, when the wind blew from the north-east and south-west about equally, the morning records showing south-west and the evening records north-east. The total rainfall was 117.54 inches: the wettest month was May with 20.67 inches. The greatest rainfall in 24 hours fell on the 8th of June, being 6.02 inches. The maximum temperature during any one day was 95.5° F. on the 20th April, and the minimum daily temperature was 71.0° F. on the 8th August and the 28th November.

Hospital.—The total number of admissions was 210, including 7 Europeans and 7 women. Eleven patients remained over from the previous year making the total treated 221. This number is less than in the 3 preceding years. Thirteen operations were performed. There were 11 deaths in hospital giving a percentage mortality of only 4.97. Two deaths occurred within 18 hours of admission and one within 36 hours. The chief diseases treated during the year were Malaria 58, with 2 deaths, Beri-beri 16 with one death, Pulmonary Tuberculosis 13 with 4 deaths, Dysentery 9 with 2 deaths and Venereal Diseases 21 with no deaths. The average daily treated was 11.63 for the year. An isolation ward is under construction.

Staff.—There was no change except that Dr. H. J. GIBBS from Singapore took charge of the Department for two weeks during the Medical Officer's absence in Singapore to give evidence in a trial for murder.

SINGAPORE.

Return of the Statistics of Population for the Year 1912.

	Europeans.	Eurasians.	Malays.	Chinese.	Tamils.	Other Nationalities.	TOTAL.
Number of inhabitants in 1912 ...	5,875	4,805	43,006	225,880	28,552	3,910	312,028
„ Births during the year 1912	127	169	1,826	4,420	453	46	7,041
„ Deaths „ 1912	73	84	1,845	10,153	795	146	13,096
„ Immigrants „ 1912	}	Not	avail	able.			
„ Emigrants „ 1912							
Number of inhabitants in 1911 ...	5,711	4,671	41,806	219,577	27,755	3,801	303,321
Increase	164	134	1,200	6,303	797	109	8,707
or							
Decrease ... ..	...	...	...	...	...	...	...

Race or Nationality should be specified, as nearly as possible, in accordance with the above model.

Meteorological Return for the Year 1912.

	TEMPERATURE.						RAINFALL.		WINDS.		REMARKS.
	Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in Inches.	Degree of Humidity.	General Direction.	Average Force.	
	°F	°F	°F	°F	°F	°F	Inches.	%			
January ...	138·6	68·9	89·5	73·2	16·3	81·3	5·36	77·0	N.E.	4·8	
February ...	145·9	70·4	89·1	74·0	15·1	81·5	14·91	82·0	N.E.	5·3	
March ...	155·0	69·6	91·7	74·2	17·5	82·9	·73	73·0	N.E.	6·1	
April ...	130·8	72·6	88·8	75·8	13·0	82·2	7·03	80·0	N.E.	4·3	
May ...	136·9	73·7	87·9	76·5	11·4	82·2	7·71	81·0	S.W.	4·7	
June ...	140·9	70·6	87·2	75·9	11·3	81·5	8·56	81·0	S.W.	4·5	
July ...	141·9	72·3	87·5	70·3	11·2	81·9	4·32	77·0	S.E.	...	
August ...	142·1	72·5	86·9	75·8	11·1	81·4	11·01	80·0	S.E.	...	
September ...	144·9	71·8	87·9	75·1	12·8	81·5	6·70	80·0	S.E.	...	
October ...	143·2	72·2	87·6	75·0	12·6	81·3	10·02	80·0	S.W.	...	
November ...	142·9	71·4	87·1	74·0	13·1	80·6	7·62	82·0	S.W.	...	
December ...	141·8	70·8	86·5	73·5	13·0	80·0	18·46	85·0	N.E.	...	
Mean	142·1	71·4	88·1	74·9	13·2	81·5	Total 102·43	80·0	...	...

SINGAPORE.

*Return of Diseases and Deaths in 1912 at the following Institutions:—
General Hospital, Prison, St. John's Island, Tan Tock Seng's Hospital, Quarantine
Camp, Leper, Beri-beri and Kandang Kerbau Hospitals and Lunatic Asylum.*

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
INFECTIVE DISEASES.						
Black Water Fever	...	3	2	3	...	
Beri-beri	138	1,059	189	1,097	161	
Cerebrospinal fever	...	2	1	2	1	
Chicken-pox	...	39	...	39	2	
Cholera	...	254	178	254	...	
Cow-pox	...	...	...	...	...
Dengue	1	7	...	8	...	
Diphtheria	...	1	...	1	...	
Dysentery	37	928	470	965	29	
Endocarditis, infective	...	...	...	...	...
Enteric Fever	10	114	62	124	14	
Erysipelas	1	6	2	7	...	
Gonorrhœa	14	260	...	274	9	
Febricula	11	220	1	231	2	
Leprosy	33	83	10	116	46	
Malaria	7	237	24	244	12	
Tertian	39	2,243	183	2,282	43	
Quartan	...	167	3	167	2	
Mixed	...	...	...	...	...
Chronic	21	411	44	432	12	
Not differentiated	73	2,370	119	2,443	33	
Measles	...	67	1	67	1	
Mumps	1	4	...	5	...	
Scarlet Fever	...	2	...	2	...	
Phagedœna	1	6	3	7	1	
Plague	1	30	24	31	...	
Pneumonia	8	215	141	223	2	
Pyæmia	1	7	7	8	...	
Pyrexia	2	86	...	88	...	
Rheumatism	4	59	1	63	2	
Septicæmia	...	18	14	18	...	
Small-pox	10	183	45	193	10	
Syphilis, Primary	29	369	...	398	12	
Secondary	51	824	21	875	65	
Tertiary	...	253	1	253	20	
Tetanus	1	14	13	15	...	
Tuberculosis	15	108	44	123	14	
Yaws	...	2	...	2	...	
Other Diseases	3	76	43	79	...	
INTOXICATIONS.						
Alcohol	...	45	...	45	...	
Mercury	...	...	...	...	...
Morphinism	...	5	1	5	1	
GENERAL DISEASES NOT INCLUDED IN THE TWO PRE- CEDING GROUPS.						
Anæmia	10	82	11	92	2	
„ pernicious	...	52	7	52	1	
Diabetes	...	4	1	4	1	
Exophthalmic Goitre	...	...	...	...	...
Chlorosis	...	...	...	...	...
Dropsy	...	...	...	...	...
Lymphadenoma	...	1	1	1	...	
Osteo Arthritis	...	...	...	...	...
Old age	4	45	22	49	9	
Other Diseases	...	11	3	11	2	
Carried forward	526	10,972	1,692	11,498	509	

Return of Diseases and Deaths in 1912 at the Singapore Hospitals.—Continued.

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
<i>Brought forward ...</i>	526	10,972	1,692	11,498	509	
CERTAIN MORBID CONDITIONS INCIDENT TO VARIOUS PARTS.						
Malformations ...	...	3	2	3	...	
Foreign Bodies, Effects of ...	...	1	...	1	...	
New Growth ...	...	...	...	...	...
Non-malignant ...	...	13	3	13	2	
Malignant ...	2	33	26	35	...	
Cyst ...	1	4	1	5	4	
DISEASES OF THE NERVOUS SYSTEM.						
DISEASES OF THE NERVES.						
Neuritis ...	7	127	2	134	8	
DISEASES OF THE SPINAL CORD AND MEMBRANES.						
Meningitis ...	...	4	2	4	...	
Myelitis ...	4	2	1	6	2	
Sclerosis ...	...	...	...	...	...
Locomotor Ataxia ...	5	10	1	15	3	
DISEASES OF THE BRAIN AND MEMBRANES.						
Meningitis ...	1	15	14	16	...	
Hæmorrhage ...	1	16	11	17	...	
Abscess ...	...	...	...	...	...
Hydrocephalus ...	...	...	...	...	...
Other Diseases ...	...	7	1	7	...	
NERVOUS DISORDERS.						
Cerebral Softening ...	...	7	7	7	...	
Paraplegia ...	5	14	...	19	2	
Hemiplegia ...	11	58	5	69	18	
Neurasthenia ...	...	2	...	2	...	
Paralysis ...	...	3	...	3	1	
Epilepsy ...	9	18	1	27	19	
Headache ...	...	1	...	1	...	
Neuralgia ...	...	9	...	9	...	
Sclerosis ...	...	1	1	1	...	
Apoplexy ...	...	...	...	...	...
Other Diseases ...	...	12	...	2	2	
MENTAL DISEASES.						
Idiocy ...	...	...	...	...	...
Mania, Acute ...	107	179	45	286	154	
Recurrent ...	1	4	...	5	5	
Chronic ...	3	1	1	4	3	
A potu ...	3	17	...	20	4	
Senile ...	1	3	2	4	2	
Melancholia, Acute ...	20	32	8	52	26	
Chronic ...	6	2	...	8	8	
Delusional Insanity ...	9	94	1	103	4	
General Paralysis of Insane...	...	2	...	2	1	
Dementia, Secondary ...	182	15	5	197	184	
Organic ...	5	...	...	5	5	
Primary ...	5	2	2	7	...	
Other Diseases ...	17	15	2	32	18	
<i>Carried forward ...</i>	931	11,698	1,836	12,629	984	

Return of Diseases and Deaths in 1912 at the Singapore Hospitals.—Continued.

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
<i>Brought forward ...</i>	931	11,698	1,836	12,629	984	
DISEASES OF THE EYE.						
Conjunctivitis Catarrhal ...	3	91	...	94	6	
Purulent ...	3	23	...	26	2	
Granular ...	...	17	...	17	...	
Keratitis ...	...	28	...	28	5	
Cornea, Ulcer of ...	17	65	...	82	2	
" Opacity ...	9	20	...	29	3	
Iritis ...	4	36	...	40	1	
Glaucoma ...	...	2	...	2	1	
Optic Neuritis ...	1	2	...	3	...	
Cataract ...	8	12	...	20	4	
Panophthalmitis ...	3	5	...	8	...	
Entropion ...	1	2	...	3	1	
Other Eye Diseases ...	31	100	...	131	55	
DISEASES OF THE EAR.						
Hæmatoma of Auricle ...	...	...	...	...	...
External Ear, Inflammation. ...	...	1	...	1	...	
Middle Ear " ...	1	12	...	13	...	
Otorrhœa ...	...	6	...	6	...	
Other Diseases ...	...	5	...	5	...	
DISEASES OF THE NOSE.						
Epistaxis ...	...	1	...	1	...	
Naso-pharangeal Catarrh ...	...	...	...	...	...
Coryza ...	...	1	...	1	...	
Other Diseases ...	...	2	...	2	...	
DISEASES OF THE CIRCULATORY SYSTEM.						
Pericarditis ...	...	13	13	13	...	
Endocarditis ...	...	12	8	12	...	
Valvular Disease ...	3	49	28	52	1	
Atheroma ...	...	...	...	...	...
Fatty Degeneration of Heart ...	...	17	1	17	...	
Endarteritis ...	...	...	...	...	...
Disordered Action of Heart ...	...	...	...	...	...
Aneurysm ...	2	11	3	13	...	
Phlebitis ...	...	...	...	...	...
Thrombosis ...	...	4	1	4	...	
Arterial sclerosis ...	...	7	3	7	1	
Other Diseases ...	...	16	1	16	...	
DISEASES OF THE RESPIRATORY SYSTEM.						
Asthma ...	2	40	1	42	2	
Laryngitis ...	...	1	...	1	...	
Bronchitis ...	6	283	5	289	6	
Hæmoptysis ...	...	6	...	6	...	
Broncho-pneumonia ...	1	32	13	33	1	
Phthisis ...	15	415	249	430	17	
Pleurisy ...	2	36	4	38	2	
Empyema ...	...	43	25	43	2	
Pyopneumothorax ...	...	9	9	9	...	
Gangrene of Lung ...	2	12	13	14	...	
Other Diseases ...	...	5	3	5	1	
<i>Carried forward ...</i>	1,045	13,140	2,216	14,185	1,097	

Return of Diseases and Deaths in 1912 at the Singapore Hospitals.—Continued.

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
<i>Brought forward ...</i>	1,045	13,140	2,216	14,185	1,097	
DISEASES OF THE DIGESTIVE SYSTEM.						
Stomatitis ...	...	17	1	17	2	
Pylephlebitis ...	...	...	...	...	...
Cholecystitis ...	...	...	...	...	...
Caries of Tooth ...	1	4	...	5	...	
Cholangitis ...	1	12	8	13	...	
Sorethroat ...	...	4	...	4	...	
Tonsillitis ...	...	13	1	13	...	
Pharyngitis ...	...	12	...	12	...	
Gastritis ...	3	74	...	77	1	
Ulceration, Stomach ...	1	7	3	8	2	
Dyspepsia ...	7	104	3	111	2	
Other Diseases of Stomach..	...	1	...	1	...	
Enteritis ...	3	169	9	172	1	
Appendicitis ...	...	5	...	5	...	
Colitis ...	...	54	2	54	2	
Ulcer Duodenum ...	...	...	...	...	...
Gastric Dilatation ...	...	2	...	2	...	
Hernia, Reducible ...	...	12	...	12	...	
„ Strangulated ...	...	27	9	27	2	
Obstruction, Intestines ...	...	3	3	3	...	
Diarrhœa ...	13	200	7	213	10	
Constipation ...	2	78	...	80	...	
Sprue ...	...	3	...	3	...	
Colic ...	...	11	...	11	1	
Ischio Rectal Abscess ...	...	7	...	7	...	
Fissure of Anus ...	...	2	...	2	2	
Fistula in Ano ...	...	66	1	66	6	
Piles ...	1	52	...	53	...	
Prolapse of Rectum ...	...	3	1	3	1	
Other Rectal Diseases ...	...	7	...	7	2	
Liver, Inflammation ...	...	4	...	4	...	
Abscess ...	2	9	6	11	1	
Cirrhosis ...	11	79	30	90	11	
Hepatitis ...	1	...	...	1	...	
Congestion ...	1	11	...	12	...	
Jaundice ...	...	9	1	9	...	
Gall Stones ...	...	...	...	...	...
Peritoneum, Inflammation ...	1	66	54	67	2	
Ascites ...	...	15	...	15	...	
Other Diseases ...	1	73	19	74	2	
DISEASES OF THE LYMPHATIC SYSTEM.						
Bubo ...	16	172	1	188	7	
Spleen, Inflammation ...	1	...	...	1	...	
Gangrene ...	...	1	1	1	...	
Rupture ...	...	...	...	...	...
Glands, Inflammation ...	...	1	...	1	...	
Suppuration ...	1	1	...	2	...	
Goitre ...	...	...	...	...	...
Hæmorrhoids ...	2	...	...	2	...	
Other Diseases ...	2	15	...	17	1	
DISEASES OF THE URINARY SYSTEM.						
Bright's Disease ...	7	83	28	90	3	
Nephritis, Acute ...	1	30	14	31	3	
Chronic ...	...	...	...	...	...
Pyelitis ...	...	...	...	...	...
Renal Calculus ...	...	4	2	4	...	
Cystitis ...	...	14	...	14	1	
Calculus ...	...	...	...	...	...
Urine, Retention of ...	...	1	1	1	...	
Pyonephrosis ...	...	4	4	4	...	
Other Diseases ...	1	11	6	12	1	
<i>Carried forward ...</i>	1,125	14,692	2,431	15,817	1,163	

Return of Diseases and Deaths in 1912 at the Singapore Hospitals.—Continued.

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
<i>Brought forward ...</i>	1,125	14,692	2,431	15,817	1,163	
DISEASES OF THE GENERATIVE SYSTEM.						
(MALE ORGANS.)						
Abscess ...	...	...	...	...	...
Stricture ...	1	21	...	22	1	
Urethral Fistula ...	...	3	1	3	...	
Extravasation of Urine ...	...	1	...	1	...	
Impacted Calculus ...	...	...	...	...	...
Prostate Hypertrophy ...	...	...	...	...	...
Phimosis ...	...	20	...	20	13	
Paraphimosis ...	...	1	...	1	...	
Ulcer of Penis ...	...	...	...	...	...
Soft Chancre ...	10	102	...	112	2	
Scrotum, Abscess ...	...	3	...	3	...	
Sloughing ...	...	...	...	...	...
Hæmatocele ...	...	12	...	12	1	
Balanitis ...	...	...	...	...	...
Epididymitis ...	...	6	...	6	...	
Hydrocele ...	1	16	...	17	...	
Orchitis ...	...	19	...	19	...	
Abscess Testis ...	...	...	...	...	...
Hernia „ ...	3	1	...	4	...	
Perineal Abscess ...	...	...	...	...	...
Other Diseases ...	...	8	...	8	...	
(FEMALE ORGANS.)						
Metritis ...	1	2	...	3	...	
Endometritis ...	1	7	...	8	2	
Erosion of Cervix ...	...	...	...	...	...
Prolapsus ...	...	...	...	...	...
Salpingitis ...	...	1	...	1	...	
Vulva, Inflammation ...	...	...	...	...	...
Abscess ...	...	...	...	...	...
Ulcer ...	...	...	...	...	...
Soft Chancre ...	...	...	...	...	...
Fistula Vesico, Vaginal ...	1	...	...	1	...	
Pelvic Cellulitis ...	...	...	...	...	...
Dysmenorrhœa ...	...	4	...	4	...	
Sapræmia ...	...	1	1	1	...	
Other Diseases ...	2	61	...	63	10	
AFFECTIONS CONNECTED WITH PREGNANCY.						
Abortion ...	...	5	1	5	...	
Pregnancy ...	7	263	3	270	5	
Other Diseases ...	...	2	1	2	...	
DISEASES OF THE FEMALE BREAST.						
Mastitis ...	...	...	...	...	...
DISEASES OF THE ORGANS OF LOCOMOTION.						
Periostitis ...	...	6	...	6	...	
Caries ...	2	9	1	11	4	
Necrosis ...	3	11	1	14	2	
Arthritis ...	4	141	6	145	18	
Synovitis ...	4	35	...	39	4	
Ankylosis ...	...	...	...	...	...
Curvature ...	...	...	...	...	...
Caries of Spine ...	2	6	6	8	...	
Lumbago ...	2	7	...	9	...	
Other Diseases ...	1	58	...	59	3	
<i>Carried forward ...</i>	1,170	15,524	2,452	16,694	1,228	

Return of Diseases and Deaths in 1912 at the Singapore Hospitals.—Concluded.

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
<i>Brought forward ...</i>	1,170	15,524	2,452	16,694	1,228	
DISEASES OF THE CONNECTIVE TISSUE.						
Cellulitis ...	10	87	8	97	4	
Abscess ...	19	354	10	373	16	
Edema ...	...	10	...	10	...	
Gangrene ...	...	20	15	20	2	
Elephantiasis ...	...	9	...	9	...	
Other Diseases ...	...	4	...	4	...	
DISEASES OF THE SKIN.						
Urticaria ...	...	1	...	1	...	
Eczema ...	7	149	...	156	3	
Impetigo ...	...	12	...	12	3	
Boil ...	...	24	...	24	...	
Carbuncle ...	2	15	...	17	1	
Herpes ...	...	7	...	7	1	
Bedsore ...	...	...	...	...	...
Pemphigus ...	...	...	...	...	...
Psoriasis ...	...	3	...	3	...	
Dermatitis exfoliativa ...	...	9	...	9	...	
Onychia ...	...	6	...	6	...	
Corn ...	...	...	...	...	...
Whitlow ...	...	4	...	4	...	
Ulcer ...	146	2,308	1	2,454	76	
Other Diseases ...	...	10	...	10	1	
INJURIES ...	70	1,382	55	1,452	49	
POISONS ...	...	...	...	...	...
TUMOURS ...	1	3	1	4	...	
PARASITES ...	...	...	...	...	...
Round Worm ...	...	7	...	7	...	
Tape-worm ...	...	...	...	...	...
Ankylostoma Duodenale ...	3	260	33	263	29	
Filariasis ...	...	1	...	1	...	
Scabies ...	8	257	...	265	8	
Ringworm ...	...	11	...	11	...	
Dhoby Itch ...	...	1	...	1	...	
Others ...	2	12	8	14	1	
OBSERVATIONS ...	2	160	1	162	4	
NO DISCOVERABLE DISEASE ...	...	44	...	44	3	
TOTAL ...	1,440	20,694	2,584	22,134	1,429	

*List of Operations done at Singapore, during the
year 1912.*

DISEASES.	YEARLY TOTAL.	Total Cases Treated.	REMARKS.
	Admis- sions.		
OPERATIONS ON TUMOURS AND CYSTS.			
Removal by Excision (Tumours)	12	12	
" " (Cysts)	5	5	
OPERATION FOR ABSCESSSES.			
By incision, drainage or aspiration	182	182	
OPERATION FOR ANEURISM.			
By ligature	4	4	
OPERATION FOR ARREST OF HÆMORRHAGE.			
By ligature	5	5	
OPERATION ON VEINS.			
Venesection	1	1	
OPERATION ON LYMPHATICS.			
Removal of Gland—by Excision	290	290	
" " Curetting	2	2	
OPERATION ON NERVES	2	2	
OPERATIONS ON SKIN AND SUBCUTANEOUS TISSUES.			
Skin Grafting (Thiersch)	11	11	
Evulsion of nail	1	1	
Removal of warts	120	120	
Curetting ulcers and sinuses	73	73	
Suturing wounds	1	1	
Incisions for Cellulitis	3	3	
Plastic	14	14	
OPERATION ON BONES.			
Incision of periosteum ... ..	...	...
Excision of bones	1	1	
Removal of Sequestra	8	8	
Fractures	4	4	
Others	4	4	
OPERATION ON JOINTS.			
Excision of joints	3	3	
Curettage ... ..	...	...
Arthrectomy	2	2	
Aspiration of joints ... ..	...	...
Breaking down adhesions	2	2	
Others	6	6	
Carried forward	756	756	

*List of Operations done at Singapore, during the
year 1912.—Continued.*

DISEASES.	YEARLY TOTAL.		REMARKS.
	Admis- sions.	Total Cases Treated.	
<i>Brought forward ...</i>	756	756	
OPERATION ON MUSCLE AND TENDON.			
Removal of bullet (Gunshot wound) ...	...	...
Others	3	3	
AMPUTATIONS.			
Thigh	5	5	
Leg	13	13	
Foot	1	1	
Hand	3	3	
Toes	15	15	
Fingers and Thumb	20	20	
Fore-arm	2	2	
OPERATION ON SKULL, BRAIN AND MENINGES.			
Trephining	3	3	
Others	4	4	
OPERATION ON THE SPINAL COLUMN.			
Lumbar puncture ... ..	..	...
Laminectomy ... ..	...	...
For Sacroiliac disease ... ..	...	...
Others ... ..	...	...
OPERATIONS ON THE FACE.			
For Harelip	2	2	
OPERATION ON EYE.			
Excision of Eye-ball	8	8	
Iridectomy	1	1	
For Entropion ... ..	...	...
For Symblepharon (plastic) ... ..	...	...
For Cataract (Extraction of Lens)	3	3	
Others	4	4	
DENTAL OPERATIONS.			
Extraction of teeth	3	3	
Others	2	2	
OPERATIONS ON NOSE AND ACCESSORY SINUSES.			
For Antral Empyema ... ..	...	...
For Nasal Polypus ... ..	...	...
Others	3	3	
Removal of infected Mastoid Cells	3	3	
OPERATIONS ON LARYNX AND TRACHEA.			
Laryngotomy	1	1	
Tracheotomy	4	4	
<i>Carried forward ...</i>	859	859	

*List of Operations done at Singapore, during the
year 1912.—Concluded.*

DISEASES.	YEARLY TOTAL.	Total Cases Treated.	REMARKS.
	Admis- sions.		
<i>Brought forward</i> ...	859	859	
OPERATIONS ON THORAX.			
Paracentesis of Pleura ...	4	4	
Thoracotomy with Excision of ribs ...	7	7	
Others ...	7	7	
OPERATIONS ON ABDOMEN.			
Laparotomy Exploratory ...	19	19	
Appendicostomy ...	5	5	
Opening and drainage of Appendicular Abscess ...	3	3	
For Strangulated Hernia ...	11	11	
For Radical Cure, Inguinal Hernia ...	27	27	
Suture of ruptured intestine ...	1	1	
For Liver Abscess ...	9	9	
Cholecystotomy ...	2	2	
Splenectomy ...	3	3	
Others ...	11	11	
OPERATIONS ON RECTUM AND ANUS.			
For Anal Fistula ...	27	27	
For Hæmorrhoids ...	30	30	
Dilatation of Rectal Stricture ...	...	...
Reduction of prolapsed Anus ...	...	...
Others ...	15	15	
OPERATIONS ON BLADDER AND URETHRA.			
Suprapubic Cystotomy ...	...	...
External Urethrotomy ...	4	4	
For Urethral Calculus (by incision) ...	1	1	
Dilation of Urethral Stricture ...	2	2	
Incision and drainage of Prostatic Abscess ...	...	...
Others ...	6	6	
OPERATIONS ON MALE GENITALIA.			
Amputation of Penis ...	4	4	
Circumcision ...	251	251	
For Paraphimosis ...	...	...
For Hydrocele (Radical cure) ...	16	16	
For Hydrocele (Tapping) ...	1	1	
For Hernia Testis ...	...	...
Castration ...	9	9	
Others ...	4	4	
OPERATIONS ON FEMALE GENITALS.			
Vaginal Fistula stitched ...	...	...
Vaginal Curetting ...	2	2	
Others ...	4	4	
Intravenous injection of Neo Salvarsan ..	24	24	
Total ...	1,368	1,368	

LABUAN.

Return of the Statistics of Population for the Year 1912.

	Europeans.	Eurasians.	Malays.	Chinese.	Tamil.	Other Nationalities.	TOTAL.
Number of inhabitants in 1912 ...	39	22	4,521	1,800	186	66	6,634
„ Births during the year 1912	4	3	141	55	2	6	211
„ Deaths „ „ 1912	1	1	73	43	...	7	125
„ Immigrants „ „ 1912	} Not obtainable.						
„ Emigrants „ „ 1912							
Number of inhabitants in 1911 ...	36	20	4,453	1,788	186	65	6,548
Increase	3	2	68	12	2	1	...
Decrease ... ..	...	...	...	...	...	...	...

Race or Nationality should be specified, as nearly as possible, in accordance with the above model.

Meteorological Return for the Year 1912.

	TEMPERATURE.						RAINFALL.		WINDS.		REMARKS.
	Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in Inches.	Degree of Humidity.	General Direction.	Average Force.	
	°F	°F	°F	°F	°F	°F	Ins.	%			
January	149.7	72.7	86.1	75.8	10.3	80.9	.72	76.0	N.E.		
February	151.3	73.0	87.0	76.2	10.8	81.6	2.68	77.0	N.E.		
March	148.6	72.8	89.2	76.9	12.3	83.5	3.02	74.0	N.E.		
April	149.3	74.0	90.8	77.9	12.9	84.3	3.57	75.0	N.E.		
May	No instrument for recording.	75.2	89.5	76.5	13.0	83.0	20.67	79.0	S.W.		
June		74.0	89.6	76.3	13.3	82.9	16.37	78.0	S.W.		
July		73.9	88.0	76.3	11.7	82.1	9.54	76.0	S.W.		
August		73.5	88.2	76.2	12.0	82.2	12.17	78.0	S.W.		
September		74.3	87.6	76.5	11.1	79.0	14.95	79.0	S.W.		
October		74.0	86.0	76.2	9.8	81.1	8.13	78.0	S.W.		
November		73.8	86.4	75.7	10.7	81.0	17.24	79.0	S.W.		
December		72.9	86.5	76.4	10.1	81.4	8.48	77.0	S.W. & N.E.		
Mean	149.7	73.6	87.9	76.4	11.5	81.9	Total 117.54	77.1	...	...

LABUAN.

Return of Diseases and Deaths in 1912 at the Labuan Hospital.

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
INFECTIVE DISEASES.						
Beri-beri ...	3	13	1	16	1	
Black-water fever	1	...	1	...	
Dysentery	9	2	9	...	
Gonorrhœa	8	...	8	...	
Gonorrhœal Arthritis ...	1	4	...	5	...	
Malaria, Cachexia	6	1	6	...	
„ Tertian	29	...	29	1	
„ Sub-tertian	23	1	23	...	
Small-pox	1	...	1	...	
Syphilis, Secondary	5	...	5	...	
„ Tertiary	1	...	1	...	
Yaws ...	1	...	...	1	...	
INTOXICATION						
Alcoholism	1	...	1	...	
GENERAL DISEASES NOT INCLUDED IN THE TWO PRECEDING GROUPS:—						
Debility	4	...	4	...	
DISEASES OF THE NERVOUS SYSTEM.						
Convulsions	1	...	1	...	
Neuritis (Malarial) ...	1	1	...	2	...	
Paresis after Cerebral Embo- lism	1	...	1	...	
DISEASES OF THE EYE.						
Cataract	1	...	1	...	
Conjunctivitis (Granular)	1	...	1	...	
„ (Gonorrhœal)	1	...	1	...	
„ (Membranous)	1	...	1	...	
Phlyctenular ulcer	1	...	1	...	
Sclero-keratitis	1	...	1	...	
Trachoma and Pannus	1	...	1	...	
DISEASES OF THE CIRCULATORY SYSTEM.						
Valvular Disease of Heart (Mitral)	1	...	1	...	
DISEASES OF THE RESPIRATORY SYSTEM.						
Asthma	3	...	3	...	
Bronchitis	4	...	4	...	
Emphysema	1	...	1	...	
Pulmonary Tuberculosis...	1	12	4	13	1	
DISEASES OF THE DIGESTIVE SYSTEM.						
Alveolar Abscess	1	...	1	...	
Constipation	1	...	1	...	
Colic	3	...	3	...	
Cirrhosis of Liver	3	1	3	...	
Carried forward ...	7	144	10	151	3	

Return of Diseases and Deaths in 1912 at the Labuan Hospital—Continued.

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
Brought forward ...	7	144	10	151	3	
DISEASES OF THE DIGESTIVE SYSTEM.— Continued.						
Diarrhoea ...	1	1	...	2	...	
Dyspepsia	1	...	1	...	
Fistula in Ano	1	...	1	...	
Hæmorrhoids	1	...	1	...	
Mucous Colitis	2	...	2	...	
DISEASES OF THE LYMPHATIC SYSTEM.						
Glands, Suppuration	2	...	2	1	
„ Inflammation	2	...	2	1	
DISEASES OF THE GENERATIVE SYSTEM.						
Soft Chancre	4	...	4	...	
Epididymitis (Gonorrhœal)	3	...	3	...	
DISEASES OF THE ORGANS OF LOCOMOTION.						
Synovitis knee	1	...	1	...	
Tubercular Caries Hip	2	...	2	...	
Tubercular Caries Hip with Neuritis ...	1	...	...	1	...	
DISEASES OF CONNECTIVE TISSUE.						
Abscess	6	...	6	...	
Elephantiasis	2	...	2	...	
DISEASES OF THE SKIN.						
Ulcer	7	...	7	...	
„ Callous	1	...	1	1	
„ Phagædenic	1	...	1	...	
„ Tubercular	1	...	1	...	
Intertrigo (Scrotum)	1	...	1	...	
Toxic Dermatitis	1	...	1	...	
INJURIES ...	2	20	1	22	...	
TUMOURS	1	...	1	...	
OBSERVATIONS	3	...	3	...	
NO DISCOVERABLE DISEASES	2	...	2	...	
Total ...	11	210	11	221	6	

List of Operations done at the Civil Hospital, Labuan, during the year 1912.

DISEASES.	YEARLY TOTAL.	Total Cases Treated.	REMARKS.
	Admis- sions.		
OPERATIONS.			
ON SKIN AND SUBCUTANEOUS TISSUE.			
Incision of Abscesses and Drainage	3	3	
ON EYE.			
Extraction of lens	1	1	
ON ABDOMEN.			
Paracentesis Abdominis	2	2	
ON ANUS.			
Slitting and Scraping Fistula	1	1	
ON GENERATIVE ORGANS.			
Circumcision	1	1	
ON GLANDS.			
Enucleation	2	2	
Scraping Bubo	1	1	
ON BONES AND JOINTS.			
Reducing dislocations	1	1	
Removal of Sequestra of Bone	1	1	
Total ...	13	13	

PENANG AND DINDINGS.

Return of the Statistics of Population for the Year 1912.

						Europeans.	Eurasians.	Malays.	Chinese.	Tamils.	Other Nationalities.	TOTAL.
Number of inhabitants in 1912						{ 1,005 16	1,546 5	36,022 4,876	79,185 1,755	23,830 1,465	1,648 20	143,236 P. 8,137 D.
„ Births during the year 1912						{ 38 ...	47 ...	1,275 177	1,844 25	473 33	89 ...	3,766 P. 235 D.
„ Deaths „ „ 1912						{ 14 ...	45 1	845 134	2,941 101	986 54	123 4	4,954 P. 294 D.
„ Immigrants „ 1912						...	...	...	77,579	106,928	...	
„ Emigrants „ 1912						...	...	...	...	63,885	...	
Number of inhabitants in 1911						{ 1,004 16	1,557 5	35,869 4,626	78,465 1,648	23,346 1,263	1,652 20	141,893 P. 7,578 D.
Increase						{ 1 ...	...	153 250	720 107	484 202	...	1,358 P. 559 D.
Decrease ... ..						...	11	...	...	...	4	15 P.

Race or Nationality should be specified, as nearly as possible, in accordance with the above model.

Meteorological Return for the Year 1912.

			TEMPERATURE.					RAINFALL.		WINDS.		REMARKS.	
			Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in Inches.	Degree of Humidity.	General Direction.		Average Force.
January	...	...	°F 157°0	°F 52°0	°F 94°0	°F 68	Not recorded.	°F 81°0	Inches. '92	% 68°0	Not recorded.	Not recorded.	
February	...	...	155°0	54°0	92°0	70		83°0	1°41	65°0			
March	...	...	157°0	56°0	95°0	70		83°1	2°21	73°0			
April	...	...	155°0	59°0	95°0	72		84°4	5°48	73°0			
May	...	...	155°0	57°0	93°0	70		83°1	14°79	77°0			
June	...	...	154°0	57°0	92°0	72		83°1	8°54	75°0			
July	...	...	151°0	54°0	93°0	71		81°9	4°05	75°0			
August	...	...	153°0	59°0	91°5	72		81°1	18°56	77°0			
September	...	...	155°0	57°0	91°5	71		80°5	14°72	81°0			
October	...	...	154°0	71°0	91°0	73		81°1	10°56	81°0			
November	...	...	153°0	70°0	92°0	72		80°8	9°50	83°0			
December	...	...	152°0	70°0	90°5	71		80°7	3°88	77°0			
Mean	...	...	154°25	59°6	92°5	71	...	81°9	7°91	754°0	...	...

PENANG.

*Return of Diseases and Deaths in 1912 at the following Institutions:—
General, District, Venereal Wards, Prison, Quarantine Camp, Jelutong, Balik
Pulau, Leper Hospital, Pulau Jerejak, Lumut, Female Leper Ward, Jelutong and
Female Ward, District Hospital and New Quarantine Station, Pulau Jerejak.*

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
INFECTIVE DISEASES.						
Beri-beri ...	19	102	23	121	18	
Chicken-pox ...	1	62	...	63	2	
Cholera ...	...	4	2	4	...	
Dysentery ...	14	475	129	489	11	
Enteric Fever ...	1	7	...	8	1	
Gangrene ...	...	10	5	10	2	
Gonorrhœa ...	4	104	...	108	6	
" Ophthalmia ...	5	20	...	25	1	
" Rheumatism ...	2	37	...	39	3	
Leprosy ...	438	193	140	631	443	
Malaria (unclassified) ...	13	768	31	781	5	
" Benign Tertian ...	15	497	1	512	21	
" Malignant Tertian ...	2	104	28	106	6	
Malarial Cachexia ...	23	198	42	221	5	
Measles ...	...	10	...	10	...	
Mumps ...	...	6	...	6	1	
Phagedœna ...	1	15	8	16	2	
Plague ...	...	4	4	4	...	
Pneumonia ...	...	65	21	65	4	
Pyrexia ...	3	167	...	170	...	
Rheumatism ...	27	316	* 2	343	27	
Septicæmia ...	...	4	2	4	...	
Small-pox ...	43	38	8	81	...	
Syphilis, Primary ...	1	79	...	80	5	
" Secondary ...	43	306	4	349	36	
Tertiary, Syphilis ...	3	20	4	23	2	
Tetanus ...	...	4	2	4	...	
Tuberculosis ...	...	4	2	4	...	
Pott's disease Spine ...	...	1	...	1	1	
Tubercular knee ...	...	2	...	2	...	
" Hip Joint ...	...	1	...	1	...	
" Disease Tarsus ...	...	2	...	2	...	
Yaws ...	...	1	...	1	...	
INTOXICATION.						
Alcoholism ...	2	25	...	27	...	
GENERAL DISEASES NOT INCLUDED IN THE TWO PRE- CEDING GROUPS.						
Anæmia ...	17	265	58	282	13	
Osteo Arthritis ...	1	5	...	6	3	
Scurvy ...	...	1	...	1	...	
Diabetes Mellitus ...	...	1	...	1	...	
Debility ...	1	51	4	52	1	
Old age ...	...	30	18	30	2	
Marasmus ...	...	4	2	4	...	
CERTAIN MORBID CONDI- TIONS INCIDENT TO VARIOUS PARTS.						
New-growths, Malignant ...	...	19	9	19	1	
" Non-Malignant ...	1	6	...	7	...	
Carried forward ...	680	4,033	549	4,713	622	

* Cardiac failure.

Return of Diseases and Deaths in 1912 at the Penang Hospitals.—Continued.

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
<i>Brought forward...</i>	680	4,033	549	4,713	622	
DISEASES OF THE NERVOUS SYSTEM.						
Neuritis ...	7	21	1	28	2	
Multiple Neuritis ...	...	1	...	1	...	
Myelitis ...	...	2	1	2	...	
Infantile Paresis ...	1	...	...	1	...	
Lateral Sclerosis ...	1	1	...	2	...	
Locomotor Ataxia ...	1	8	...	9	...	
Meningitis ...	...	5	5	5	...	
Cerebral Hæmorrhage ...	...	2	...	2	...	
Apoplexy ...	...	1	1	1	...	
Paraplegia ...	...	5	...	5	1	
Spastic Paraplegia ...	...	8	...	8	6	
Hemiplegia ...	5	24	7	29	7	
Facial Paresis ...	...	2	...	2	...	
Chorea ...	...	1	...	1	...	
Epilepsy ...	1	10	...	11	...	
Vertigo ...	...	2	...	2	...	
Headache ...	1	3	...	4	...	
Neuralgia ...	...	246	...	246	...	
Hysteria ...	...	1	...	1	...	
Mania ...	...	4	2	4	...	
Melancholia ...	...	1	...	1	...	
Dementia ...	2	10	1	12	3	
Insomnia ...	...	1	...	1	...	
Mental Degeneration ...	...	2	...	2	...	
DISEASES OF THE EYE.						
Conjunctivitis ...	2	110	...	112	3	
Purelent Ophthalmia ...	...	1	...	1	...	
Trachoma ...	2	14	...	16	1	
Pterygium ...	...	6	...	6	...	
Keratitis ...	...	4	...	4	2	
Wound Cornea ...	...	2	...	2	...	
Ulcer Cornea ...	1	34	...	35	3	
Opacity Cornea ...	1	18	...	19	1	
Staphyloma ...	...	1	...	1	...	
Iritis ...	1	20	...	21	2	
Chr. Iritis ...	...	6	...	6	...	
Iridocyclitis ...	2	...	...	2	...	
Choroiditis ...	...	1	...	1	...	
Glaucoma ...	...	1	...	1	...	
Hypopyon ...	...	3	...	3	...	
Optic Atrophy ...	...	5	...	5	1	
Cataract ...	2	27	...	29	3	
Panophthalmitis ...	1	4	...	5	...	
Amaurosis ...	7	30	...	37	18	
Fistula Lacrymal Sac ...	...	2	...	2	...	
Sty ...	...	11	...	11	...	
Entropion ...	...	6	...	6	2	
Ectropion ...	1	1	...	2	...	
DISEASES OF THE EAR.						
Otorrhœa ...	...	29	...	29	...	
Accumulation Wax ...	...	1	...	1	...	
Acute Otitis Media ...	...	1	...	1	...	
Mastoid Abscess ...	...	1	...	1	...	
DISEASES OF THE NOSE.						
Rhinitis ...	...	4	...	4	...	
Epistaxis ...	1	1	...	2	...	
Nasal Catarrh ...	...	2	...	2	...	
Aural Polypus ...	...	1	...	1	...	
<i>Carried forward...</i>	720	4,741	567	5,461	677	

Return of Diseases and Deaths in 1912 at the Penang Hospitals.—Continued.

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
<i>Brought forward ...</i>	720	4,741	567	5,461	677	
DISEASES OF THE CIRCULATORY SYSTEM.						
Val. Disease Heart Aortic...	1	4	2	5	...	
Mitral ...	...	58	19	58	3	
Sup. Pericarditis	...	1	1	1	...	
Endocarditis	...	1	1	1	...	
Tachycardia	...	6	...	6	...	
Dilatation Heart	1	26	1	27	...	
Fatty Heart	...	1	...	1	...	
Arteris Sclerosis	...	2	...	2	...	
Aneurysm	...	8	3	8	3	
Cerebral Thrombosis	1	3	1	4	...	
Syncope	...	2	...	2	...	
DISEASES OF THE RESPIRATORY SYSTEM.						
Asthma	...	26	...	26	2	
Bronchitis	9	333	* 8	342	18	
Catarrhal ...	...	4	...	4	...	
Hæmoptysis	...	1	...	1	...	
Broncho Pneumonia	...	16	4	16	2	
Fibroid Phthisis	1	2	...	3	...	
Phthisis	16	265	152	281	20	
Emphysema	...	1	...	1	...	
Pleurisy	1	8	1	9	1	
Empyema	...	2	1	2	...	
DISEASES OF THE DIGESTIVE SYSTEM.						
Stomatitis	...	4	...	4	1	
Gangrenous Stomatitis	...	1	1	1	...	
Alveolar Abscess	...	9	...	9	...	
Caries Tooth	...	4	...	4	...	
Necrosis Lower jaw	1	...	1	1	...	
Sore-throat	...	1	...	1	...	
Tonsillitis	1	3	...	4	...	
Suppuration Tonsillitis	...	1	1	1	...	
Pharyngitis	...	8	...	8	1	
Gastritis	...	9	...	9	2	
Gastric Ulcer	...	1	...	1	1	
Hæmatemesis	...	4	...	4	...	
Dyspepsia	5	112	...	117	3	
Dilatation Stomach	...	1	...	1	...	
Enteritis	...	8	1	8	1	
Appendicitis	...	3	...	3	...	
Inguinal Hernia	...	25	...	25	...	
Intestinal Obstruction	...	4	3	4	...	
Bubonocoele	...	1	...	1	...	
Diarrhoea	15	430	120	445	13	
Constipation	...	106	1	106	...	
Colic	...	186	...	186	...	
Ulcer Anus	...	1	...	1	...	
Fissure Anus	...	1	...	1	...	
Fistula in Ano	...	13	...	13	2	
Hæmorrhoids	...	11	...	11	...	
Prolapse Rectum	...	8	...	8	1	
Hepatitis	...	1	...	1	...	
Cirrhosis Liver	4	37	16	41	4	
Abscess Liver	...	9	3	9	1	
Jaundice	...	3	...	3	...	
Cholecystitis	...	3	1	3	...	
Peritonitis	...	6	6	6	...	
Ascites	2	...	1	2	...	
<i>Carried forward ...</i>	778	6,525	916	7,303	756	

* 1 committed suicide by hanging.

Return of Diseases and Deaths in 1912 at the Penang Hospitals.—Continued.

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
<i>Brought forward ...</i>	778	6,525	916	7,303	756	
DISEASES OF THE LYMPHATIC SYSTEM.						
Bubo ...	4	111	...	115	5	
Sup. Glands neck ...	...	6	...	6	1	
Enlarged Spleen ...	...	1	...	1	...	
Adenitis Cervical ...	...	7	...	7	...	
" " Axilla ...	...	1	...	1	...	
Lymphangitis ...	...	1	...	1	1	
Elephantiasis Scrotum ...	...	4	...	4	...	
" Labia ...	...	2	...	2	...	
" Leg ...	...	6	...	6	1	
DISEASES OF THE URINARY SYSTEM.						
Nephritis ...	...	6	2	6	...	
Bright's Disease ...	10	108	30	118	13	
Cystitis ...	...	14	* 1	14	2	
Urinary Calculus ...	...	1	...	1	...	
Retention of Urine ...	...	3	...	3	...	
Anuria ...	...	1	...	1	...	
" Paroxysmal ...	...	1	...	1	...	
Albuminuria ...	...	1	...	1	...	
Stricture Urethra ...	1	10	1	11	1	
Urethritis ...	...	1	...	1	...	
Urethral Fistula ...	...	2	...	2	...	
Extravasation of Urine ...	...	1	...	1	...	
DISEASES OF THE GENERATIVE SYSTEM.						
(MALE ORGANS.)						
Phimosis ...	...	10	...	10	...	
Paraphimosis ...	...	6	...	6	...	
Ulcer Penis ...	2	50	...	52	...	
Soft Chancre ...	12	163	...	175	10	
Abscess Scrotum ...	...	4	...	4	...	
Pruritus Scrotum ...	1	7	...	8	...	
Slaughting Scrotum ...	...	6	...	6	...	
Ulcer Scrotum ...	...	5	...	5	...	
Varicocele ...	...	1	...	1	...	
Hydrocele ...	...	18	...	18	...	
Orchitis ...	...	17	...	17	...	
Epididymitis ...	...	6	...	6	...	
Hernia Testis ...	...	7	† 1	7	...	
Gangrene Scrotum ...	...	2	1	2	...	
(FEMALE ORGANS.)						
Salpingitis ...	...	1	...	1	...	
Endometritis ...	...	3	...	3	...	
Metritis ...	2	7	...	9	...	
Erosion ...	6	79	...	85	1	
Vaginitis ...	...	1	...	1	...	
Abscess Vulva ...	...	1	...	1	...	
Ulcer Vulva ...	1	9	1	10	...	
Amenorrhœa ...	...	2	...	2	...	
Menorrhagia ...	...	2	...	2	1	
Leucorrhœa ...	1	11	...	12	...	
AFFECTIONS CONNECTED WITH PREGNANCY.						
Abortion ...	...	5	...	5	...	
Pregnancy ...	...	1	...	1	...	
Labour ...	1	16	‡ 1	17	...	
<i>Carried forward ...</i>	819	7,253	954	8,072	793	

* Sapræmia. † Septicæmia. ‡ Syncope.

Return of Diseases and Deaths in 1912 at the Penang Hospitals.—Continued.

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
<i>Brought forward ...</i>	819	7,253	954	8,072	793	
DISEASES OF THE GENERATIVE SYSTEM. —Continued.						
AFFECTIONS CONNECTED WITH PARTURITION.						
Atony of the Uterus ...	...	1	...	1	...	
Rupture Perineum ...	...	2	...	2	...	
Premature birth ...	...	2	2	2	...	
AFFECTIONS CONSEQUENT ON PARTURITION.						
Post-Partem Hæmorrhage...	...	1	1	1	...	
Puerperal Septicæmia ...	...	1	1	1	...	
„ Sepræmia ...	...	2	...	2	...	
Protracted Labour ...	...	1	1	1	...	
DISEASES OF THE ORGANS OF LOCOMO- TION.						
Osteitis ...	...	1	...	1	...	
Periostitis ...	...	1	...	1	...	
Caries ...	1	1	...	2	...	
Necrosis bone ...	6	10	...	16	2	
Synovitis knee ...	2	34	1	36	2	
Arthritis ...	1	12	...	13	5	
Ankylosis knee ...	...	1	...	1	...	
Lumbago ...	1	20	...	21	1	
Caries Spine ...	1	...	...	1	1	
Curvature Spine ...	...	1	...	1	...	
Myalgia ...	4	11	...	15	3	
Ankylosis Elbow ...	1	2	...	3	...	
Psoas Abscess ...	...	1	...	1	...	
Muscular Atrophy ...	...	1	...	1	...	
Tenosynovitis ...	...	3	...	3	...	
Bursitis ...	...	1	...	1	...	
DISEASES OF THE CONNECTIVE TISSUE.						
Cellulitis ...	3	20	...	23	1	
Abscess ...	5	171	* 2	176	1	
Sinus ...	...	22	...	22	3	
DISEASES OF THE SKIN.						
Eczema ...	3	41	...	44	3	
Impetigo ...	...	24	...	24	...	
Boil ...	...	40	...	40	...	
Carbuncle ...	...	5	...	5	...	
Herpes Zoster ...	...	2	...	2	...	
Pemphigus ...	...	1	...	1	...	
Psoriasis ...	...	1	...	1	...	
Dermatitis ...	...	6	...	6	...	
Ulcer ...	116	1,011	† 1	1,127	106	
Corn ...	...	2	...	2	...	
Whitlow ...	...	4	...	4	...	
Onychia ...	...	4	...	4	...	
Warts ...	...	2	...	2	...	
General Injuries ...	3	51	4	54	5	
Local „ ...	21	441	11	462	16	
<i>Carried forward ...</i>	987	9,211	978	10,198	942	

* Septicæmia. † Diarrhœa.

Return of Diseases and Deaths in 1912 at the Penang Hospitals.—Concluded.

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
<i>Brought forward</i> ...	987	9,211	978	10,198	942	
POISONS.						
Alleged Poisoning ...	...	2	...	2	...	
Crocodile bite ...	...	1	...	1	...	
Opium Habit ...	...	1	...	1	...	
PARASITES.						
Helminthiasis ...	1	...	...	1	...	
Ankylostomiasis ...	2	80	21	82	13	
Tinea Solium ...	...	2	...	2	...	
„ Inbricata ...	...	11	...	11	...	
„ Circinata ...	...	6	...	6	...	
Ascaris Lumbricoides ...	1	6	...	7	...	
Scabies ...	2	115	...	117	4	
Malingering ...	1	14	...	15	...	
No Appreciable Disease ...	3	44	...	47	...	
Observation ...	6	327	* 1	333	9	
OPERATIONS.						
Imperforate Anus ...	...	1	1	1	...	
Amputation Arm ...	...	1	...	1	...	
„ Leg ...	...	1	...	1	...	
Nasal Polypus ...	...	1	...	1	...	
GRAND TOTAL ...	1,003	9,824	1,001	10,827	968	

Operations in 1912 at the Penang Hospitals.

DISEASES.	YEARLY TOTAL.	Total Cases Treated.	REMARKS.
	Admis- sions.		
OPERATIONS.			
EXCISION OF TUMOURS.			
Non-malignant 	3	3	
Malignant 	1	1	
ON THE SKIN AND SUBCUTANEOUS TISSUES.			
Incision of Abscesses 	85	85	
Incision for Cellulitis 	8	8	
Curetting for Sinuses 	3	3	
Curetting for Ulcers and Wounds 	3	3	
Incision of Suppurating Glands 	65	65	
Excision of Lymphatic Glands 	20	20	
Suturing Wounds 	1	1	
For wound of Hand and Leg 	3	3	
ON THE EYE AND EAR.			
For enucleation of Eye-ball 	3	3	
For Mastoid Abscess 	1	1	
ON TENDONS.			
Suturing Tendons 	4	4	
ON ARTERIES.			
Ligature of Aneurysms 	2	2	
Carried forward ...	202	202	

* Peritonitis from perforation of Dysentery Ulcer.

Operations in 1912 at the Penang Hospitals.—Continued.

DISEASES.	YEARLY TOTAL.		REMARKS.
	Admis- sions.	Total Cases Treated.	
<i>Brought forward ...</i>	202	202	
OPERATIONS.—Continued.			
ON ABDOMEN.			
Laparotomy	4	4	
Appendicostomy	1	1	
Colotomy	1	1	
For Strangulated Hernia	1	1	
For Radical cure for Inguinal Hernia	8	8	
For Liver Abscess	5	5	
Sigmoidostomy	1	1	
ON RECTUM AND ANUS.			
For Polypus rectum	1	1	
For Hæmorrhoids	5	5	
Dilatation of Rectal Stricture	1	1	
For Imperforate Anus	1	1	
For Multiple Fistulæ	1	1	
For Ulcer of Anus	1	1	
ON THE MALE GENERATIVE ORGANS.			
Circumcision	22	22	
For Paraphimosis	1	1	
For Hydrocele	9	9	
For Hernia Testis	6	6	
Amputation Penis	1	1	
For Elephantiasis Scrotum	3	3	
ON BLADDER AND URETHRA.			
Suprapubic Puncture	1	1	
For Perineal Fistula	1	1	
For Stricture Urethra by Bougies	1	1	
For Extravasation of Urine	1	1	
ON FEMALE GENITALS.			
Curetting	6	6	
For Rupture Perineum	3	3	
For Elephantiasis Vulva	1	1	
For Urethral and Vaginal Fistulæ	3	3	
ON BONES AND JOINTS.			
Amputations	24	24	
Removal of Sequestra	8	8	
Excision of Joints	1	1	
Incision into joints	4	4	
Removal of Bursa	1	1	
Breaking down Adhesions	1	1	
ON THE NOSE.			
For Nasal Polypus	1	1	
ON THE RESPIRATORY SYSTEM.			
For Empyema	3	3	
ON THE SKULL.			
Trephining	1	1	
Total ...	336	336	

PROVINCE WELLESLEY.

Return of the Statistics of Population for the Year 1912.

	Europeans.	Eurasians.	Malays.	Chinese.	Tamils.	Other Nationalities.	Nationality Unknown.	TOTAL.
Number of inhabitants in 1912 ...	252	200	74,462	32,438	22,474	977	...	130,803
„ Births during the year 1912	7	4	3,021	731	676	17	...	4,456
„ Deaths „ „ 1912	3	6	1,831	981	833	16	9	3,679
„ Immigrants „ 1912	} No data available.							
„ Emigrants „ 1912								
Number of inhabitants in 1911 ...	244	208	74,164	31,981	22,207	536	...	129,340
Increase	8	...	298	457	267	441	...	1,471
or Decrease ... ..	...	8	...	...	...	...	...	8

Race or Nationality should be specified, as nearly as possible, in accordance with the above model.

Meteorological Return for the Year 1912.

				TEMPERATURE.				RAINFALL.	WINDS.		REMARKS.			
				Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.			Amount in Inches.		Degree of Humidity.	General Direction.	Average Force.
				°F	°F	°F	°F	°F	°F	Inches.		%		
January	...	...	152.9	68.4	92.5	70.5	22.0	81.5	2.82	68.0	N.W.	6	
February	...	...	155.8	70.2	93.8	72.0	21.8	82.9	3.52	69.0	N.W.	5	
March	...	...	155.2	71.2	93.0	73.1	20.1	83.0	8.74	78.0	S.W.	6	
April	...	...	154.9	72.2	93.3	74.2	19.1	83.7	11.28	77.0	N.W.	6	
May	...	...	151.0	72.2	91.0	74.0	17.0	82.5	10.65	77.0	S.W.	6	
June	...	...	150.4	72.3	91.7	73.8	17.9	82.7	3.83	77.0	S.W.	6	
July	...	...	149.5	71.0	93.2	72.7	20.5	82.9	1.43	73.0	S.W.	7	
August	...	...	148.2	71.1	91.4	72.7	18.7	82.0	9.62	77.0	S.W.	6	
September	...	...	147.3	70.7	89.8	72.2	17.6	81.0	14.96	77.0	N.W.	6	
October	...	...	152.0	70.5	89.5	72.3	17.2	80.9	14.95	78.0	N.W.	7	
November	...	...	151.0	69.6	88.9	71.4	17.5	80.1	9.33	78.0	S.W.	7	
December	...	...	152.7	68.6	90.2	71.3	18.8	80.1	5.17	75.0	N.W.	7	
Mean	...	...	151.7	70.6	91.5	72.5	19.0	82.0	Total 96.30	75.0	...	...

PROVINCE WELLESLEY.

*Return of Diseases and Deaths in 1912 at the following Institutions:—
Butterworth, Bukit Mertajam and Sungai Bakap Hospitals.*

DISEASES	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL,		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
INFECTIVE DISEASES.						
Beri-beri ...	1	36	* 5	37	2	
Cerebro-Spinal fever ...	...	1	...	1	...	
Chicken-pox ...	...	1	...	1	...	
Cholera ...	...	1	...	1	...	
Dengue ...	...	3	...	3	...	
Dysentery ...	2	145	† 48	147	6	
Enteric fever ...	...	1	...	1	...	
Erysipelas ...	...	1	...	1	...	
Gonorrhœa ...	...	56	...	56	1	
Gonorrhœal Ophthalmia ...	1	14	...	15	1	
" Arthritis ...	...	16	1	16	...	
" Warts ...	...	4	...	4	...	
Leprosy ...	...	13	1	13	...	
Malarial Fever, B. Tertian ...	1	158	...	159	...	
" Quartan ...	...	13	...	13	...	
" Malignant ...	3	219	‡ 28	222	6	
Malarial Cachexia ...	...	47	§ 2	47	2	
Measles ...	...	1	...	1	...	
Mumps ...	...	1	...	1	...	
Phagedœna ...	4	46	§ 4	50	4	
Pneumonia ...	1	33	† 12	34	1	
Pyæmia ...	1	3	3	4	1	
Pyrexia ...	1	78	...	79	...	
Rheumatisms ...	2	20	...	22	...	
Puerperal Septicæmia ...	1	...	...	1	...	
Syphilis, Primary ...	...	45	...	45	1	
" Secondary ...	8	211	2	219	7	
" Tertiary ...	2	24	...	26	3	
" Congenital ...	...	1	1	1	...	
Tetanus ...	...	1	1	1	...	
Tuberculosis ...	1	22	6	23	2	
Yaws ...	...	8	...	8	...	
INTOXICATIONS.						
Alcoholism ...	...	12	...	12	...	
Mercurialism ...	...	1	...	1	...	
GENERAL DISEASES NOT INCLUDED IN THE TWO PRECEDING GROUPS.						
Anæmia ...	2	12	1	14	...	
Diabetes Mellitus ...	...	1	...	1	...	
Purpura ...	...	1	1	1	...	
CERTAIN MORBID CON- DITIONS INCIDENT TO VARIOUS PARTS.						
Hare-lip ...	...	1	...	1	...	
New-growth, Non-Malignant ...	...	4	...	4	...	
" Malignant ...	...	27	¶ 12	27	...	
Cyst ...	...	3	...	3	...	
Turpentine Poisoning ...	...	1	...	1	...	
Opium Poisoning ...	...	1	§ 1	1	...	
DISEASES, NERVOUS SYSTEM.						
Neuritis ...	1	11	1	12	1	
Myelitis ...	...	5	2	5	...	
Spastic Paraplegia ...	1	...	...	1	...	
Carried forward ...	33	1,303	132	1,336	38	

* 3 within 48 hours.

† 6 within 48 hours.

‡ 14 within 48 hours.

§ 1 within 48 hours.

¶ 2 within 48 hours.

*Return of Diseases and Deaths in 1912 at the Province Wellesley
Hospitals.—Continued.*

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
<i>Brought forward ...</i>	33	1,303	132	1,336	38	
DISEASES, NERVOUS SYSTEM.—Continued.						
Multiple Sclerosis ...	...	4	...	4	...	
Disseminated Sclerosis ...	I	...	...	I	...	
Bulbar Paralysis ...	...	I	...	I	...	
Apoplexy ...	...	3	I	3	...	
Hemiplegia ...	I	18	2	19	6	
Paraplegia ...	I	I	...	2	...	
Facial Paralysis ...	...	I	...	I	...	
Torticollis ...	...	I	...	I	I	
Epilepsy ...	...	2	...	2	...	
Cephalalgia ...	...	11	...	11	...	
Neuralgia ...	I	2	...	3	I	
Pleurodynia ...	...	I	...	I	...	
DISEASES OF THE EYE.						
Conjunctivitis ...	I	9	...	10	...	
„ Purulent ...	...	I	...	I	...	
„ Granular ...	...	I	...	I	...	
Pterygium ...	...	5	...	5	...	
Keratitis ...	...	5	...	5	...	
Ulcer Cornea ...	2	12	...	14	2	
Opacity Cornea ...	I	5	...	6	I	
Staphyloma ...	...	5	...	5	...	
Iritis ...	...	3	...	3	...	
Optic Atrophy ...	...	I	...	I	...	
Cataract ...	...	10	...	10	I	
Panophthalmitis ...	...	2	...	2	...	
Blepharitis ...	...	2	...	2	...	
Entropion ...	...	3	...	3	...	
DISEASES OF THE EAR.						
Otitis Media ...	...	3	...	3	...	
„ Interna ...	...	2	...	2	...	
DISEASES OF THE NOSE.						
Coryza ...	...	I	...	I	...	
DISEASES, CIRCULATORY SYSTEM.						
Endocarditis ...	...	2	2	2	...	
Valvular Disease, Heart ...	I	39	* 5	40	3	
Dilatation of Heart ...	...	4	† 2	4	...	
Angina Pectoris ...	...	I	* I	I	...	
Aneurysm ...	...	3	* 2	3	...	
Phlebitis ...	...	I	...	I	...	
Thrombosis ...	...	I	...	I	...	
Varicose Veins ...	...	2	...	2	...	
DISEASES, RESPIRATORY SYSTEM.						
Asthma ...	2	10	...	12	...	
Laryngitis ...	...	3	...	3	...	
Bronchitis ...	4	66	3	70	I	
Broncho-Pneumonia ...	...	6	* 2	6	...	
Phthisis ...	5	85	‡ 41	90	2	
Emphysema ...	...	4	I	4	...	
Pleurisy ...	...	11	...	11	...	
Empyema ...	...	I	I	I	...	
<i>Carried forward ...</i>	53	1,657	105	1,710	56	

* I within 48 hours. † 2 within 48 hours. ‡ 10 within 48 hours.

*Return of Diseases and Deaths in 1912 at the Province Wellesley
Hospitals.—Continued.*

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
<i>Brought forward ...</i>	53	1,657	105	1,710	56	
DISEASES, DIGESTIVE SYSTEM.						
Stomatitis ...	...	2	...	2	...	
Gangrene Mouth ...	...	1	...	1	...	
Necrosis Jaw ...	...	1	...	1	...	
Caries Tooth ...	...	6	...	6	...	
Pyorrhœa Alveolaris ...	...	1	...	1	...	
Tonsillitis ...	...	3	...	3	...	
Pharyngitis ...	...	2	...	2	...	
Gastritis ...	...	5	...	5	...	
Dyspepsia ...	...	8	...	8	...	
Gastralgia ...	...	11	...	11	...	
Enteritis ...	1	28	* 2	29	2	
Appendicitis ...	1	...	...	1	...	
Colitis ...	...	6	...	6	...	
Fæcal Accumulation Intestine ...	...	1	...	1	...	
Hernia Inguinal ...	...	7	...	7	...	
Volvulus Intestine ...	...	1	...	1	...	
Intestinal Obstruction ...	...	2	* 1	2	...	
Diarrhœa ...	5	51	16	56	...	
Constipation ...	...	13	...	13	...	
Colic (Intestinal) ...	...	14	...	14	...	
Appendicular Abscess ...	...	1	1	1	...	
Peri-Proctitis ...	...	1	...	1	...	
Ischio-Rectal Abscess ...	...	5	...	5	...	
Ulcer Anus ...	...	1	...	1	...	
Hæmorrhoids ...	...	8	...	8	...	
Prolapse Ani ...	...	2	...	2	...	
Anal Abscess ...	...	3	...	3	...	
Pancreatitis Hæmorrhagic... ..	...	1	* 1	1	...	
Cirrhosis of Liver ...	2	28	* 7	30	2	
Hepatitis ...	...	4	...	4	...	
Abscess, Liver ...	...	2	1	2	...	
Jaundice ...	2	2	* 2	4	...	
Peritonitis ...	1	2	3	3	...	
DISEASES, LYMPHATIC SYSTEM.						
Peri-Splenitis ...	...	1	...	1	...	
Lymphadenitis (non-suppu- rative) ...	...	11	...	11	...	
Lymphadenitis (suppurative) ...	...	31	...	31	2	
DISEASES, URINARY SYSTEM.						
Nephritis (Acute) ...	...	2	...	2	...	
" (Chronic) ...	2	34	8	36	2	
Cystitis ...	...	5	...	5	...	
Urinary Calculus ...	...	1	...	1	...	
Retention of Urine ...	...	1	...	1	...	
Glycosuria ...	...	4	...	4	...	
DISEASES, GENERATIVE SYSTEM.						
MALE ORGANS.						
Urethral Abscess ...	...	2	...	2	...	
Stricture Urethra ...	...	9	...	9	...	
Urinary Fistula ...	...	3	...	3	1	
Extravasation of Urine ...	...	2	* 2	2	...	
Phimosis ...	2	19	...	21	1	
<i>Carried forward ...</i>	69	2,005	239	2,074	66	

* 1 within 48 hours.

*Return of Diseases and Deaths in 1912 at the Province Wellesley
Hospitals.—Continued.*

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS
		Admis- sions.	Deaths.			
<i>Brought forward ...</i>	69	2,005	239	2,074	66	
DISEASES, GENERA- TIVE SYSTEM.— <i>Contd.</i>						
MALE ORGANS.— <i>Contd.</i>						
Paraphimosis	2	...	2	...	
Chancroids ...	2	87	...	89	4	
Condyloma	1	...	1	...	
Sloughing Scrotum	3	...	3	1	
Sinus Scrotum	1	...	1	...	
Abscess Spermatic	1	...	1	...	
Varicocele	1	...	1	...	
Hydrocele	7	...	7	...	
Orchitis	5	...	5	...	
Abscess Testis	1	...	1	...	
Hernia Testis	8	...	8	...	
FEMALE ORGANS.						
Subinvolution Uterus	1	...	1	...	
Retroversion Uterus	5	...	5	...	
Ulcer Vagina	3	...	3	...	
Condyloma Vulva	1	...	1	...	
Dysmenorrhœa	1	...	1	1	
AFFECTIONS CONNECTED WITH PREGNANCY.						
Labour (Normal)	1	...	1	...	
„ (Difficult)	3	...	3	...	
Still-birth	1	...	1	...	
Post-partem Hæmorrhage	1	...	1	...	
Retained Placenta	1	...	1	...	
DISEASES OF THE FEMALE BREAST.						
Mammary Abscess	1	...	1	...	
DISEASES OF THE ORGANS OF LOCOMOTION.						
Periostitis	7	...	7	1	
Necrosis of bone ...	1	9	...	10	1	
Synovitis ...	1	3	...	4	...	
Arthritis ...	2	19	...	21	1	
„ Septic	3	1	3	1	
Ankylosis of Joint	2	...	2	1	
Caries of Spine	1	...	1	...	
Pott's Disease	1	...	1	...	
Myalgia	11	...	11	1	
Talipus	1	...	1	...	
DISEASES OF THE CONNECTIVE TISSUE.						
Cellulitis	24	...	24	2	
Abscess ...	1	51	...	52	1	
Elephantiasis	3	...	3	1	
DISEASES OF THE SKIN.						
Eczema	18	...	18	...	
Impetigo	1	...	1	...	
Boil	2	...	2	...	
Carbuncle	4	1	4	...	
<i>Carried forward ...</i>	76	2,301	241	2,377	82	

*Return of Diseases and Deaths in 1912 at the Province Wellesley
Hospitals.—Concluded.*

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
<i>Brought forward ...</i>	76	2,301	241	2,377	82	
DISEASES OF THE SKIN.—Continued.						
Psoriasis ...	...	1	...	1	...	
Warts ...	...	1	...	1	...	
Sclerodermia ...	...	1	...	1	...	
Lupus Erythematus ...	...	1	...	1	...	
Onychia ...	...	7	...	7	...	
Whitlow ...	...	1	...	1	...	
GENERAL INJURIES.						
Burns and Scalds ...	...	7	...	7	...	
Effects of Lightning ...	...	1	...	1	...	
Starvation ...	...	2	1	2	...	
Shock ...	...	1	* 1	1	...	
LOCAL INJURIES.						
Contusions ...	...	34	...	34	1	
Dislocations ...	...	3	...	3	...	
Sprain ...	1	6	...	7	1	
INJURIES OF ANATOMICAL REGIONS.						
Head and Neck ...	...	64	1	64	...	
Trunk and Abdomen ...	...	21	† 2	21	...	
UPPER EXTREMITIES.						
Wounds ...	1	55	1	56	...	
LOWER EXTREMITIES.						
Wounds ...	18	267	* 1	285	16	
FRACTURES.						
Fracture Skull ...	...	10	‡ 3	10	...	
„ Clavicle ...	...	1	...	1	...	
„ Ribs ...	...	6	1	6	...	
Fracture & dislocation Spine ...	1	1	...	2	1	
„ Pelvis ...	...	1	...	1	...	
„ Upper Extremities ...	1	32	...	33	2	
„ Lower Extremities ...	1	14	...	15	2	
Gun-shot wounds ...	1	2	...	3	...	
POISONED WOUNDS.						
Boar-gore ...	...	1	...	1	...	
Bull-gore ...	...	1	...	1	...	
Monkey-bite ...	...	1	...	1	...	
Snake-bite ...	...	1	...	1	...	
Dog-bite ...	...	4	...	4	...	
Centipede-bite ...	...	1	...	1	...	
PARASITES.						
Ankylostomiasis ...	12	238	§ 48	250	23	
Round-worms ...	...	20	1	20	1	
Dracontiasis ...	...	6	...	6	...	
Scabies ...	...	39	...	39	1	
Ringworms ...	...	6	...	6	...	
Filariasis ...	...	3	...	3	...	
Observation for Insanity ...	1	36	...	37	4	
Observation ...	...	21	...	21	1	
No Appreciable Disease ...	...	18	...	18	...	
Senility ...	...	3	1	3	...	
GRAND TOTAL ...	113	3,240	302	3,353	135	

* 1 within 48 hours. † 2 within 48 hours. ‡ 3 within 48 hours. § 5 within 48 hours.

*List of Operations performed in Province Wellesley Hospitals,
during the year 1912.*

DISEASES.	YEARLY TOTAL.	Total Cases Treated.	REMARKS.
	Admis- sions.		
OPERATIONS ON TUMOURS AND CYSTS.			
Partial Excision and Curetting of Malignant growth	1	1	
Removal of Sarcoma Knee	1	1	
Excision of Sebaceous Cyst	3	3	
„ Dermoid Cyst	1	1	
OPERATION FOR ABSCESSSES.			
Incisions and drainage for Abscesses	61	61	
Curetting Ulcers	58	53	
REMOVAL FOREIGN BODIES.			
From Foot	3	3	
„ Wrist	1	1	
„ Nose	1	1	
OPERATION FOR ARREST OF HÆMORRHAGE.			
By Ligature	1	1	
OPERATION ON VEINS.			
Intra-Venous Saline	5	5	
„ Salvarsan	2	2	
OPERATION ON LYMPHATICS.			
Removal of Glands by Excision	39	39	
Removal of Glands by Curetting	17	17	
OPERATION ON SKIN AND SUB- CUTANEOUS TISSUES.			
Skin Grafting (Thiersch)	6	6	
Incisions for Cellulitis	12	12	
Crucial Incisions for Carbuncle	2	2	
Injection of Saline Solutions	3	3	
OPERATION ON BONES.			
Sequestrotomy	24	24	
Setting Fracture	2	2	
OPERATION ON JOINTS.			
REDUCTION OF DISLOCATION.			
Lower-jaw	4	4	
Shoulder	1	1	
Elbow	2	2	
Hip	1	1	
Carried forward ...	251	251	

*List of Operations performed in Province Wellesley Hospitals,
during the year 1912.—Continued.*

DISEASES.	YEARLY TOTAL.	Total Cases Treated.	REMARKS.
	Admis- sions.		
<i>Brought forward ...</i>	251	251	
OPERATION ON JOINTS.— <i>Continued.</i>			
REDUCTION OF DISLOCATION.— <i>Continued.</i>			
Passive movements	6	6	
Exploring of Knee-joints	3	3	
Aspiration of Joints	4	4	
Arthrectomy	5	5	
Excision of Lower-jaw Malignant-growth	1	1	
Excision of Elbow-joint	1	1	
OPERATION ON MUSCLE AND TENDON.			
Suturing severed Muscle	20	20	
AMPUTATIONS.			
Maurice Perrins Subastragaloid Amputation	2	2	
Stephen Smith's disarticulation through knee	1	1	
Finger	2	2	
Toe	10	10	
OPERATION ON SKULL, BRAIN AND MENINGES.			
Trephining	2	2	
„ Frontal Sinuses	1	1	
Elevation of depressed fracture of frontal-bone	1	1	
Removal of Extra Aural clot for Injury	1	1	
Excision of a portion of Cortex of brain for Injury	1	1	
OPERATION ON THE SPINAL COLUMN.			
Lumbar puncture of subarachnoid Space for Stovaine Injection	2	2	
OPERATION ON FACE.			
Plastic Operation for Harelip	3	3	
Antral Puncture	1	1	
OPERATION ON EYE.			
Entropion	3	3	
Paracentesis of Anterior Chamber	1	1	
Excision of Eye-ball	3	3	
For Pterygium	1	1	
Iridectomy	1	1	
Extraction lens	1	1	
DENTAL OPERATION.			
Extraction Teeth	26	26	
<i>Carried forward ...</i>	354	354	

*List of Operations performed in Province Wellesley Hospitals,
during the year 1912.— Concluded.*

DISEASES.	YEARLY TOTAL.	Total Cases Treated.	REMARKS.
	Admis- sions.		
<i>Brought forward ...</i>	354	354	
OPERATIONS ON LARYNX AND TRACHEA.			
Suturing of divided Trachea	1	1	
OPERATION ON THORAX.			
Paracentesis of Pleura	5	5	
Thoracotomy with Excision of ribs	1	1	
Trans-thoracic Incision with resection of ribs for drainage of Hepatic Abscess	1	1	
OPERATIONS ON ABDOMEN.			
Paracentesis Abdominis	45	45	
Exploratory Laparotomy	1	1	
Laparotomy for Volvulus	2	2	
„ Ectopic	1	1	
Enterorrhaphy for Ruptured Gut	1	1	
Radical Cure for Inguinal Hernia	5	5	
Omentopaxy	2	2	
Splenectomy	3	3	
OPERATIONS ON RECTUM AND ANUS.			
For Anal Fistula	2	2	
For Hæmorrhoids (whiteheads)	1	1	
OPERATIONS ON BLADDER AND URETHRA.			
Passing of Catheter	110	110	
Dilatation of Stricture	10	10	
Incision for Extravasation of Urine	1	1	
For Urethral Fistula	2	2	
OPERATIONS ON THE MALE GENERATIVE ORGANS.			
Circumcisions	58	58	
Cauterisation Penis	2	2	
Amputation Penis	4	4	
Radical Cure for Hydrocele	7	7	
Removal of Testis for Hernia Testis	6	6	
OPERATIONS ON THE FEMALE GENERATIVE ORGANS.			
Dilatation of Cervical Canal	2	2	
Reduction of Retroverted gravid Uterus	2	2	
Evacuation of Uterus for Retention Membranes	2	2	
For Ruptured Perineum	1	1	
Forceps Delivery	2	2	
Redressed Wd. Abdomen under Chloroform	13	13	
Total ...	647	647	

MALACCA.

Return of the Statistics of Population for the Year 1912.

—				Europeans.	Eurasians.	Malays.	Chinese.	Tamils.	Other Nationalities.	TOTAL.
Number of inhabitants in 1911 ...				303	1,586	78,813	35,450	7,500	429	124,081
,, Births during the year 1912				5	70	3,807	787	86	130	4,885
,, Deaths ,, ,, 1912				2	70	3,574	1,907	558	163	6,274
,, Immigrants ,, ,, 1912				}	No data available.					
,, Emigrants ,, ,, 1912										
Number of inhabitants in 1912 ...				313	1,585	81,203	36,526	7,728	442	127,797
Increase				10	...	2,390	1,076	228	13	3,717
Decrease ... ..				...	1	...	...	...	...	1

Race or Nationality should be specified, as nearly as possible, in accordance with the above model.

Meteorological Return for the Year 1912.

				TEMPERATURE.				RAINFALL.		WINDS.		REMARKS.		
				Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in Inches.	Degree of Humidity.		General Direction.	Average Force.
				°F	°F	°F	°F	°F	°F	Ins.	%			
January	...	...	...	156.2	...	89.3	72.7	16.6	82.2	.86	81.0	N.	...	
February	...	...	...	156.7	...	89.0	73.1	15.9	82.6	3.13	79.0	N.	...	
March	...	...	...	157.1	...	90.3	73.5	16.8	83.3	2.51	81.0	N.	...	
April	...	...	...	156.6	...	89.6	73.6	16.0	83.5	5.85	83.0	N.	...	
May	...	...	...	151.2	...	88.2	73.9	14.3	83.0	9.99	86.0	N.	...	
June	...	...	...	148.7	...	88.4	74.3	14.1	82.8	8.76	87.0	N.	...	
July	...	...	...	151.7	...	88.1	73.2	14.9	83.0	3.18	84.0	N.	...	
August	...	...	...	149.3	...	87.7	72.3	15.4	81.8	8.59	88.0	N.	...	
September	...	...	...	148.9	...	87.6	72.5	15.1	81.9	5.34	87.0	N.	...	
October	...	...	...	146.3	...	87.7	72.7	14.0	81.3	10.43	89.0	N.W.	...	
November	...	...	...	145.6	...	86.1	72.7	13.4	81.2	4.31	88.0	N.W.	...	
December	...	...	...	144.9	...	86.2	72.1	14.1	80.6	8.87	87.0	N.	...	
Year 1912 Mean				151.1	..	88.0	73.0	15.0	82.2	Total 71.72	85.0	...	...

MALACCA.

Return of Diseases and Deaths in 1912 at the following Institutions:—General, Pauper, Contagious Disease, Leper, Prison, Alor Gajah and Jasin Hospitals.

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
INFECTIVE DISEASES.						
Black-water fever	...	1	...	1	...	
Beri-beri	95	566	75	661	86	
Chicken-pox	...	5	...	5	...	
Cholera	...	2	2	2	...	
Dysentery	25	210	105	235	15	
Erysipelas	...	5	3	5	...	
Gangrene	...	10	5	10	...	
Gonorrhœa	3	90	...	93	2	
" Rheumatism	...	4	...	4	...	
" Ophthalmia	...	3	...	3	...	
" Arthritis	1	7	1	8	...	
" Cystitis	...	1	...	1	...	
Leprosy	1	9	1	10	...	
Malaria	7	40	...	47	1	
Malaria-fever, Benign T.	4	42	...	46	1	
" Quartan	...	7	...	7	...	
" Malignant	57	1,485	137	1,542	52	
" Chronic	7	94	12	101	7	
Malarial Neuritis	...	6	...	6	...	
Measles	1	7	...	8	...	
Mumps	...	4	...	4	...	
Phagedœna	5	25	18	30	1	
Pneumonia	3	78	34	81	4	
Pyæmia	...	1	1	1	...	
Pyrexia	...	4	...	4	...	
Rheumatism	1	64	...	65	7	
Septicæmia	...	1	1	1	...	
Small-pox	11	31	11	42	...	
Syphilis	15	135	9	150	8	
Tuberculosis	2	4	4	6	...	
INTOXICATION.						
Alcoholism	...	2	...	2	...	
GENERAL DISEASES NOT INCLUDED IN THE TWO PRECEDING GROUPS.						
Anæmia	4	87	18	91	6	
Lymphadenoma	...	1	...	1	...	
CERTAIN MORBID CONDITIONS INCIDENT TO VARIOUS PARTS.						
Cleft Palate	...	1	...	1	...	
New growth, Non-malignant	...	4	...	4	...	
" Malignant	...	6	3	6	...	
Drug Rash	...	1	...	1	...	
DISEASES OF THE NERVOUS SYSTEM.						
Neuritis	3	48	...	51	3	
" Peripheral	1	6	...	7	...	
Myelitis	1	1	...	2	1	
Meningitis	...	2	1	2	...	
Hæmorrhage, Cerebral	...	3	3	3	...	
Hemiplegia	2	15	3	17	1	
Carried forward	249	3,118	447	3,367	195	

Return of Diseases and Deaths in 1912 at the Malacca Hospitals.—Continued.

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
<i>Brought forward ...</i>	249	3,118	447	3,367	195	
DISEASES OF THE NERVOUS SYSTEM.— <i>Continued.</i>						
Epilepsy ...	...	1	1	1	...	
Tetany ...	...	1	...	1	...	
Neuralgia ...	...	2	...	2	1	
Mania ...	...	1	...	1	...	
DISEASES OF THE EYE.						
Conjunctivitis ...	1	17	...	18	4	
Granular Ophthalmia ...	1	6	...	7	...	
Keratitis ...	...	1	...	1	...	
Ulcer Cornea ...	1	19	...	20	...	
Opacity Cornea ...	...	4	...	4	2	
Staphyloma ...	...	1	...	1	...	
Iritis ...	...	7	...	7	...	
Cataract ...	...	1	...	1	...	
Nyctalopia ...	...	1	...	1	...	
DISEASES OF THE EAR.						
Ear-ache ...	...	1	...	1	...	
Inflammation, Ear ...	...	2	...	2	1	
Otitis Media ...	...	1	...	1	...	
Mastoid Abscess ...	...	1	...	1	...	
DISEASES OF THE NOSE.						
Rhinitis Septic ...	...	2	...	2	...	
Ulcer Nose ...	...	2	...	2	...	
Necrosis Nasal bones ...	...	1	...	1	...	
DISEASES OF THE CIRCULATORY SYSTEM.						
Pericarditis ...	...	2	2	2	...	
Endocarditis ...	...	1	1	1	...	
Mitral Regurgitation ...	...	4	2	4	...	
Fatty Degeneration Heart ...	...	1	1	1	...	
Dilatation Heart ...	...	1	...	1	...	
Aneurysm ...	...	1	1	1	...	
DISEASES OF THE RESPIRATORY SYSTEM.						
Asthma ...	1	9	...	10	...	
Laryngitis ...	...	1	...	1	...	
Bronchitis ...	...	43	...	43	2	
Congestion Lung ...	...	6	1	6	1	
Phthisis ...	7	125	64	132	11	
Pleurisy ...	1	2	...	3	...	
Empyema ...	...	2	2	2	...	
Pyopneumothorax ...	...	1	...	1	...	
DISEASES OF THE DIGESTIVE SYSTEM.						
Stomatitis ...	1	2	...	3	...	
Caries Tooth ...	...	1	...	1	...	
Cancrum Oris ...	...	4	3	4	1	
Necrosis Lower Jaw ...	...	1	...	1	...	
Pyorrhœa Alveolaris ...	...	1	...	1	...	
Toothache ...	...	1	...	1	...	
Tonsillitis Follicular ...	...	1	...	1	...	
" Suppurative ...	...	1	1	1	...	
<i>Carried forward ...</i>	262	3,401	526	3,663	218	

Return of Diseases and Deaths in 1912 at the Malacca Hospitals.—Continued.

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
<i>Brought forward...</i>	262	3,401	526	3,663	218	
DISEASES OF THE DIGESTIVE SYSTEM.— <i>Continued.</i>						
Pharyngitis ...	2	26	...	28	...	
Ulcer Pharynx ...	...	1	...	1	...	
Gastritis ...	...	5	...	5	...	
Gastric Ulcer ...	...	1	...	1	...	
Dyspepsia ...	...	4	...	4	...	
Gastralgia ...	...	4	...	4	...	
Enteritis ...	2	6	...	8	...	
Gastro Enteritis ...	...	1	1	1	...	
Fæcal accumalation ...	...	1	...	1	...	
Hernia Inguinal ...	...	4	...	4	...	
Diarrhœa ...	9	195	92	204	6	
Constipation ...	...	2	...	2	...	
Intestinal Colic ...	...	12	...	12	...	
Ulcer Anus ...	...	2	...	2	1	
Abscess Anus ...	...	1	...	1	...	
Fistula in Ano ...	...	2	...	2	1	
Hæmorrhoids ...	...	4	...	4	...	
Prolapse Anus ...	1	...	...	1	...	
Cirrhosis Liver ...	3	26	17	29	2	
Jaundice ...	...	7	2	7	...	
Peritonitis ...	...	3	1	3	...	
DISEASES OF THE LYMPHATIC SYSTEM.						
Lymphadenitis ...	...	1	...	1	...	
Bubo ...	...	21	...	21	1	
Lymphangitis ...	...	1	...	1	...	
DISEASES OF THE URINARY SYSTEM.						
Acute Nephritis ...	...	20	5	20	...	
Chronic „ ...	8	42	21	50	4	
Cystitis ...	...	7	...	7	...	
Diabetes Insipidus ...	1	...	...	1	...	
Hæmoglobinuria ...	...	1	...	1	...	
Chyluria ...	...	1	...	1	...	
Stricture Urethra ...	...	1	...	1	...	
Extravasation Urine ...	...	1	1	1	...	
Impacted Calculus Urethra ...	...	1	...	1	...	
DISEASES OF THE GENERATIVE SYSTEM.						
Phimosis ...	...	2	...	2	...	
Paraphimosis ...	...	3	...	3	...	
Balanitis ...	...	1	...	1	1	
Ulcer Penis ...	...	7	...	7	3	
Chancroid Male ...	...	31	...	31	7	
Abscess Scrotum ...	1	1	...	2	...	
Gangrene Scrotum ...	...	1	1	1	...	
Sloughing Scrotum ...	1	...	1	1	...	
Hydrocele ...	...	3	...	3	...	
Orchitis ...	...	7	...	7	...	
Hernia Testis ...	...	1	...	1	...	
Oopharitis ...	...	1	...	1	...	
Metritis ...	...	1	...	1	...	
Chancroid Female ...	...	18	...	18	...	
Ulcer Labia Majora ...	...	2	...	2	...	
Condyloma ...	...	3	...	3	...	
Abortion ...	...	1	...	1	...	
Labour Tedious ...	...	2	...	2	...	
„ Natural ...	...	1	...	1	...	
<i>Carried forward ...</i>	290	3,891	668	4,181	244	

Return of Diseases and Deaths in 1912 at the Malacca Hospitals.—Continued.

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
<i>Brought forward ...</i>	290	3,891	668	4,18	244	
DISEASES OF THE ORGANS OF LOCO- MOTION.						
Periostitis ...	...	2	...	2	...	
Necrosis ...	...	3	...	3	...	
Arthritis ...	...	6	...	6	2	
Synovitis ...	1	10	...	11	...	
Ankylosis Knee ...	...	1	...	1	...	
Caries Spine ...	...	9	3	9	2	
Lumbago ...	...	1	...	1	...	
Myalgia ...	1	9	...	10	...	
DISEASES OF THE CONNECTIVE TISSUE.						
Cellulitis ...	1	23	5	24	1	
Abscess ...	1	47	1	48	1	
Elephantiasis ...	...	2	...	2	...	
DISEASES OF THE SKIN.						
Urticaria ...	...	1	...	1	...	
Eczema ...	...	31	...	31	1	
Ulcers ...	78	553	...	631	39	
Boils ...	...	1	...	1	...	
Carbuncles ...	...	7	...	7	...	
Herpeszoster ...	...	3	...	3	...	
Lichen Planus ...	...	2	...	2	...	
Ichthyosis ...	...	1	...	1	...	
Wart ...	...	1	...	1	...	
Onychia ...	...	5	...	5	...	
INJURIES, GENERAL AND LOCAL.						
Burns ...	...	3	1	3	...	
Scalds ...	...	4	1	4	...	
Privation ...	2	1	1	3	...	
Contusions ...	...	17	...	17	1	
Abrasions ...	...	8	...	8	...	
Concussion Brain ...	...	1	1	1	...	
Wounds ...	3	76	1	79	2	
Monkey bite ...	...	1	...	1	...	
Multiple Injuries ...	1	25	1	26	1	
Gun shot wounds ...	1	5	...	6	...	
Sprain Ankle ...	...	1	...	1	...	
Dislocation Elbow ...	...	1	...	1	...	
" Shoulder ...	...	1	...	1	...	
Foreign-body Pharynx ...	...	1	...	1	...	
Bruise Rt. Kidney—Hæma- toma ...	...	1	...	1	...	
Intraperitoneal Hæmorrhage ...	...	1	1	1	...	
Fracture Simple ...	2	10	...	12	2	
" Compound ...	...	1	...	1	...	
Circumcision ...	1	2	...	3	...	
SURGICAL OPERA- TIONS.						
Amputation Finger ...	1	...	...	1	...	
" Fore-arm ...	...	1	...	1	...	
" Leg ...	6	2	...	8	...	
" Foot ...	2	...	...	2	...	
Castration ...	...	1	...	1	...	
<i>Carried forward ...</i>	391	4,773	684	5,164	296	

Return of Diseases and Deaths in 1912 at the Malacca Hospitals.—Concluded.

DISEASES.	Remain- ing in Hospital at end of 1911.	YEARLY TOTAL.		Total Cases Treated.	Remain- ing in Hospital at end of 1912.	REMARKS.
		Admis- sions.	Deaths.			
<i>Brought forward ...</i>	391	4,773	684	5,164	296	
PARASITES.						
Ascaris Lumbricoides ...	...	1	...	1	...	
Ankylostomiasis ...	25	297	71	322	26	
Ringworm ...	...	3	...	3	1	
Scabies ...	4	65	...	69	8	
Guinea Worm ...	1	...	...	1	...	
Tapeworm ...	...	2	...	2	...	
POISONS.						
Ptomaine Poisoning ...	...	1	...	1	...	
OBSERVATION						
...	17	96	...	113	7	
NO APPRECIABLE DISEASE						
...	...	3	...	3	...	
Total ..	438	5,241	755	5,679	338	